



Arboretum

BULLETIN

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TABLE OF CONTENTS

Arboretum Activities, Spring 1947.....	B. O. Mulligan	1
Arboreta Develops Interest in Forestry.....	Joseph F. Kaylor	4
Consider a Few Shrubs of Refinement.....	Harold T. Abbott	7
A Commercial Lily Breeding Program.....	John W. Heyer	9
The Charles Houston Shattuck Arboretum of the University of Idaho.....	Merrill F. Deters	12
Flowering Cherries.....	Elizabeth H. Hanley	14
The Gay Gaillardias.....	Susann Fry Biddulph	17
Editorial		18
About Our Name		19
Second Annual Rhododendron Show.....	Donald S. Graham	20
Notes on Culture of Azaleas and Rhododendrons in a St. Louis Suburb.....	C. Barbre	25
Seattle's Third Annual Camellia Show.....		27
Book Review		29
Arboretum Notebook		30

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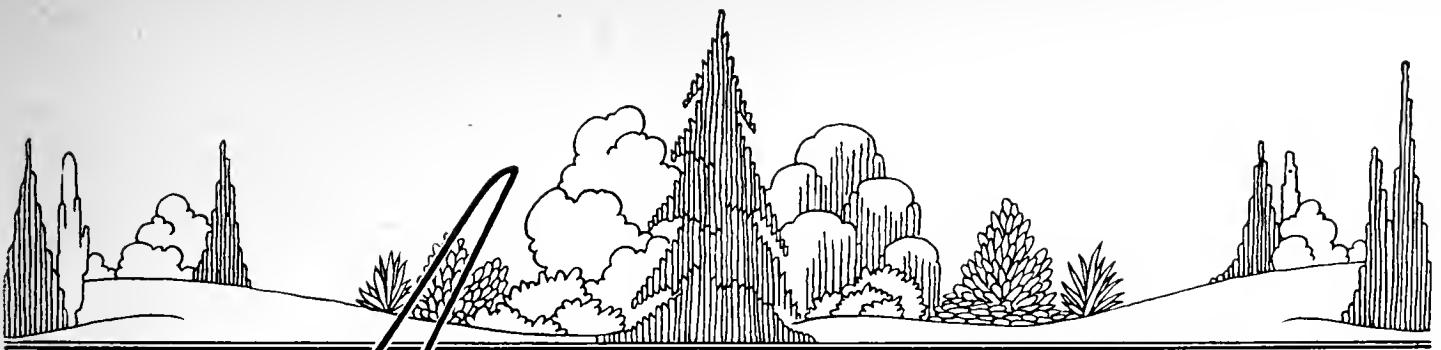
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The Arboretum Bulletin

Arboretum Activities, Spring 1947

B. O. MULLIGAN

SINCE our last notes were published, the Arboretum staff has been principally occupied in cleaning and weeding operations, in continuous planting out of young stock either from the glasshouses, frames, or nursery areas, and in essential work of grass-mowing.

Dealing with the last item first, we have recently bought new mowing equipment for use with the Ford-Ferguson tractor and hydraulic lift, namely the Worthington Ranger Assembly, comprising a set of three 30-inch rotary cutting units coupled together behind the tractor. As together these cut a swathe seven feet wide, the greatly increased speed of operations can be appreciated, especially on the large areas of grass along Azalea Way, at the Montlake entrance, between the Boulevard and Interlaken, and elsewhere. The saving of time and labor from such an investment in machinery will be very considerable during the six or seven months when mowing is constantly required, and being strongly constructed, its useful life, with proper attention, should be long. Two of the older hand types of motor-mowers, 30 and 36 inches wide, have been thoroughly overhauled and are used for cutting long grass or for areas amongst trees which the tractor cannot reach.

Planting has principally been concentrated either on certain groups of plants, e.g. *Camellia japonica* varieties, Japanese Maples and Quinces (*Chaenomeles*), or on particular areas of ground, such as that surrounding the parking lot near the East Lynn Street footbridge,

and the triangular section between the Boulevard and the south side of Union Bay.

Approximately 112 camellias, in 32 varieties, were set out in February in the newly prepared beds against the Broadmoor boundary fence, facing the head of Rhododendron Glen. In the southern bed a number of plants of the European Strawberry Tree, *Arbutus Unedo*, and the Silverbell-tree of the southeastern United States, *Halesia monticola*, were placed to eventually provide shelter and shade from the early morning sun, as well as the beauty of the latter's flowers in early May.

Between the camellias, which were widely spaced to provide ample room for future growth, some of the low-growing semi-evergreen azaleas have been planted, including the crimson "Hinodegiri," the new white varieties "Alabaster" and "Stardust," received from Glenn Dale, Md., and in the northern bed 73 plants of the pink "Daybreak," another of Mr. B. Y. Morrison's hybrids. We are also experimenting here with some of the California species of *Arctostaphylos* raised from seeds sent us by Mrs. Lester Rowntree, of Carmel, California, including *A. pungens*, *A. Mariposa*, *A. patula*, and the prostrate *A. Hookeri*. Since the position is sunny, the soil light and well-drained, we may expect some of them at least to settle down and thrive with us.

A further fifty camellias in variety were planted on the bank behind the parking lot near the E. Lynn Street bridge, where they face east and are in shade for the greater part

of the day. Here now also is a collection of all our available species of hemlock (*Tsuga*), the western *T. heterophylla* and *T. Mertensiana*, *T. caroliniana* from the eastern United States, *T. Sieboldii* from Japan, and the beautiful Himalayan *T. dumosa*. Higher up behind them is a considerable grouping of rhododendrons, chiefly *R. decorum*, with some unproved hybrids of this and of *R. Fortunei* amongst them. In the foreground is an extended planting of *R. chartophyllum*, and at the extreme northern end some examples of the rose-purple *R. concinnum*. Elsewhere in this area groups of crab-apples have been placed, including the bushy, white-flowered *Malus Sargentii* and pink *M. Scheideckeri*, birches to increase the older groups of trees, several kinds of conifers for winter effect, and beside the Boulevard *Pieris floribunda* and some of the prostrate junipers.

At the site near Union Bay we have not attempted to fill in the whole area this spring, judging it better at present only to lay a foundation in the form of background planting and to leave considerable space for cultivation by the tractor, so that the ground can be kept reasonably weed-free throughout the summer. In the background are *Arbutus Unedo*, *Pinus radiata*, and *Picea glauca*, inter-planted in groups with the native cottonwood. In front of these are crab-apples, hawthorns, flowering plums, and other medium-sized trees, with *Amelanchier canadensis*, the shadbush, in front of the pines and hemlocks at the western end. One of our few failures has to be noted here, where we lost the majority of the nine 10-year-old native hemlocks transplanted in late February or early March, due probably to the warm, dry period that followed soon afterwards. Amongst the few foreground plantings made here are *Rhus copallina* for its rich red coloring in fall, some pink eastern dogwoods, double white *Philadelphus*, and adjacent to them below the fastigate cottonwood trees, a large group of one of the *Triflorum* series of rhododendrons (*R. desquamatum*).

A little east of this area, behind the row of tall *Simonii* poplars and nearly opposite the

end of Miller Street, two circular beds of quinces (*Chaenomeles lagenaria* and *C. japonica*, and some of their hybrids) have been made, which include some thirty varieties and over 100 plants. As these beds are on a slight slope facing the Boulevard, in years to come they should provide a bright display of color in late March and April.

Coming now to Azalea Way, where the planting facing the lower end of Rhododendron Glen in honor of Mrs. Alexander McEwan was formally handed over to the University by the Seattle Garden Club on May 7th, we have not been able to achieve as much as we had hoped, for lack of sufficient labor, but three large beds of Mr. B. Y. Morrison's new hybrid azaleas have been made and planted on the east side, towards the northern end, totalling 680 plants in 18 varieties. Some of these which have flowered this spring give promise of being useful additions to the list of azaleas of the Kurume type now available for gardens in western Washington, especially "Alabaster" and "Stardust" (white), "Glamour" (rose-red), "Anchorite" (rose-pink), and perhaps "Tanager" (magenta). The first two are tall-growing, the last three dwarfer in habit.

In addition to this, gaps have been filled in previous groups, misplaced varieties have been moved, and some rearrangement of color schemes has taken place, but much more of such work will be necessary in future years before a satisfactory and pleasing arrangement of the various colors and forms of these shrubs can be achieved.

Towards the southern end of Azalea Way, close to the Boulevard, several species of larches have been planted in groups to supplement those already there. With their delicate spring foliage, attractive habit and fall coloring these should lend additional interest and beauty to that particular area.

At the Madison Street entrance to the Arboretum the planting of flowering peaches mentioned in the last issue of the BULLETIN was duly made, comprising double white, double pink, and a weeping form of the last variety. Several trees of the lovely March-flowering

Prunus Blireana were used as a centerpiece to this group.

In Rhododendron Glen no large-scale plantings have been made, since prepared ground was not available, but small groups have been introduced amongst the species near the head of the Glen, including *R. Griersonianum* and some of its hybrids (e.g. "Fabia" and "Fusilier"), a group of *R. formosum* was placed on a steep north-facing bank, and more species and plants placed in the *Triflorum* section lower down the Glen in full exposure to the northwest.

Between the Glen and Woodland Garden the nucleus of new collections of silver fir (*Abies*) and spruce (*Picea*) have been planted, approximately six species of the former in groups of three or more plants, and six of the latter, though of these fewer plants were available. Amongst *Abies* we have the native *magnifica* var. *shastensis*, *lasiocarpa* and *concolor*, and the Spanish fir *A. Pinsapo*; of *Picea*, *P. retroflexa* from W. China, *P. jezoensis* from Japan, and *P. Smithiana* from the Himalayas. Here these trees will be able to grow up shaded by maples, Douglas firs, and other natural inhabitants of this area, and so long as they are not crowded by them should thrive and eventually become large specimens. The spruces are placed in a newly cleared area, just south of the magnolia collection, which is being temporarily used as nursery quarters for a large number of rhododendrons for which at present no space is available. Some of these are unflowered hybrids of *R. decorum* and *R. Fortunei*; others are true species, but all will have to remain here whilst their section of the nursery is thoroughly cleaned of weeds, which had in some cases almost overgrown the smaller plants, or until permanent quarters can be found and properly prepared for them.

As plants become available we also propose extending the magnolias southward into this area, so that eventually we may have a large space devoted almost entirely to spruces, magnolias, and some of the best of these rhododendron hybrids.

Along the upper Road, about midway between the magnolias and Rhododendron Glen,

a start has been made in forming collections of tree peonies, and of Cistus and their allies the Helianthemums and Halimiums. Some 30 peonies are now planted in the partly shaded hollow below road level on the west side, around a tree of the Western hemlock; next fall we expect to add about another 20 plants to extend this group, and others later as opportunity occurs. Conditions in this particular site, both of soil and aspect, seem likely to favor these lovely shrubs, and the situation is one where they can easily be seen from the road. We also propose to plant clematis in the future around this area, being of the same family as *Paeonia* (Ranunculaceae), and in the meantime have placed several magnolias and *Abies* here to provide variety at different seasons. The site for the cistus on the opposite side of the road is entirely open to the morning sun, on a mound which slopes to the south, which should provide these shrubs of the Mediterraneau maquis with something akin to their accustomed living conditions. A group of bay trees (*Laurus nobilis*) has been placed here both as suitable associates and because that family is sited close by on the Arboretum planting plan.

The last large group of shrubs or small trees which must be mentioned are the Japanese maples, of which over 100 varieties or forms, the great majority of *Acer palmatum*, were imported from Japan in 1940, at a most opportune moment. Some of these had been planted out in the maple section, close to the Boulevard, between Interlaken Boulevard and Madison Street playground, but many yet remained in the nursery. Another 26 plants—about 17 different varieties—have now been added to the main collection, and nine duplicates were placed on the bank near the upper entrance to Woodland Garden, to add their delicate color and charm of form at different seasons of the year to this corner of the Arboretum.

The narrow borders around the office and on the south side of the glass-houses have had fresh soil added to them and a variety of plants set out which prefer such a warm and

(Continued on Page Thirty-two)

Arboreta Develop Interest in Forestry

JOSEPH F. KAYLOR*

AN ARBORETUM gives man a chance to get acquainted with different members of the plant world. In a country like ours, with one-third of its area in forests, an arboretum becomes an important link between this vast area and our individual interest in woody plants. Trees and people have much in common. Most trees thrive in an association of plants. Man has a similar dependence on family and friends, but man is also dependent on the forests and trees for outdoor recreation, education, and natural beauty in things which promote health and spiritual well-being for people.

Our forests, a basic renewable natural resource, provide much of the material for the needs of our citizens along with employment of labor and capital in industry and on farms. To a large extent domestic and foreign trade rely on our forests. A plentiful supply of wood fiber growing on these lands suited only to the production of forest crops is vital to our national economy and defense. Where we have a scarcity of forests or where we have great concentration of people, forests become much more valuable. In these cases much of their value is based upon ability to conserve and regulate important inland waters essential for irrigation, navigation, power, aquatic life, domestic use and recreation. Forests on our uplands protect crop and other lands from floods, erosion and eventual destruction. Our wooded areas also provide food and shelter for wildlife, an important asset that must not be overlooked.

As an educational institution an arboretum instills in folk a desire to know more about individual trees and plant life in general, so they not only develop but expand a desire for information about forestry. The American Forestry Association, an educational institution, is promoting an intensive program to meet a growing need for the dissemination of all forms of educational material, including the

establishment of local, state and national arboreta. Such outdoor laboratories operated in connection with our institutions of higher learning will focus attention on the need to preserve for posterity a sample of all woody plants with which our land area is or has been abundantly covered. In addition, plantings of exotic varieties tend to make the arboretum that much more appealing to a larger number of people.

One of the needs to emphasize in tree development is faster growing varieties, with longer fiber for pulp, plastics or lumber. From arboreta may come just such improvements in species with a high utility value when used in large scale reforestation of idle or cut-over areas.

Several years ago the association reached the conclusion that it would be extremely important to the future of forestry in the United States to make a comprehensive appraisal of the forest resources of our nation and the impact of war upon them. In 1944 it was inaugurated. It was made as a public contribution to postwar reconstruction and handling of the nation's forest resource. The purpose was to provide down-to-date facts and information as a dependable guide to post-war action shown to be necessary to replenish the forest wealth of the nation.

More than five hundred public-spirited citizens and organizations financed this critical inventory of forest conditions on a state-by-state basis. Active cooperation of private, state and federal agencies in the field required thousands of contacts and interviews with forest owners and operators. Facts gathered from so many authentic sources provided the basis for the appraisal report. This two and one-half years' study was completed and summarized in 1946.

The association then selected a committee of 19 men to review these findings and propose a program of action. Their proposals formed the basis for national discussion at an American Forest Congress called by the association in October, 1946.

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The appraisal and the Forest Congress were a pulse-feeling of the nation's forest situation and showed a critical need for concerted action to solve some of the most pressing problems in forest conservation.

For instance, the facts brought out that there are something over four million owners of small forest properties controlling 57 per cent of the commercial timberland of the United States. To aid these owners we find less than two hundred foresters under supervision of state foresters available to render service in timber marking under a practical plan of sustained production. One forester can aid only about one hundred owners in a year.

A great deal of interest has been aroused concerning the destruction of our forest resources by fire. In fact the appraisal recently completed by the association shows that in some areas other destructive agents—insects and diseases—are now destroying sawtimber more rapidly than fire. With this in mind the future effort of the association will be geared to an educational program. It will show the urgent need to promote and coordinate thinking of the American public to the end that all citizens interested in the welfare of this great country will be intelligent boosters of a broad conservation program emanating from state and local sources.

Education of the American public through group methods or individuals calls for a co-ordinated nationwide campaign by all interested agencies and organizations employing every available medium to impress the average citizen with the importance of forests to economic and social welfare.

The success of American forestry in all its fields rests upon a thorough understanding by our citizens of the value of forest products to individuals and their communities and to their state and nation. Without such public awareness, desirable measures of forest conservation will be difficult to attain. Education to bring about this understanding should begin in the public schools. It will be most effective when related in specific terms to local conditions and needs. However, to effectuate this program in public schools we must train leaders. An arbo-

retum at each institution of learning is a basic need for such training.

The educational activities in each state should rest on factual analyses of the actual extent and effectiveness of fire prevention and other good forest practices; the condition of the state's forest lands and growing stock; its present and potential production in relation to industrial and consumption requirements; the net position of the state as an importer or exporter of wood; and other important contributions made by forests to the state's welfare.

The individual state reports in the association's forest resources appraisal afford an excellent starting point for this type of education.

Basic principles then require concerted action by appropriate groups, agencies, and organizations in each state to bring about effective private, state and federal policies and programs of forest management and utilization.

Quite often in the past a land owner harvested his forest crop only once in a lifetime. That practice was take-it-all, we have plenty more. Today we must change these philosophies to those of considering the land capable of producing repeated crops. Here then the forestry agencies have an opportunity to provide a nationwide expansion under federal and state leadership of education and technical assistance to owners of small forest properties, whether attached to farms or not.

As a basis for federal policy and financial cooperation, broad educational and group activities should be conducted by state extension agencies; service programs and individual assistance on the ground should be directed by state departments of forestry under federal and state policies clearly defining the limits of free public aid.

The foregoing division of activities should be used as a general guide. Of utmost importance is its practical adaptation by the agencies working in each state to local conditions, facilities and available personnel. Coordination at the state level is necessary to avoid duplication in actual field services, overlapping assignments and travel costs, and conflicting or confusing contacts with land owners. The big question arising in the minds of the

four million small timberland owners is when, where and how they can get a little help from public forestry agencies in proper cutting practices, reforestation, and many other conservation activities. Today this work is being carried on by 25 federal agencies. The activities of these federal bureaus in this field should be coordinated by the Secretary of Agriculture.

Other needs are expansion of forest educational and extension programs in agricultural areas to reduce woodland depletion by livestock; provision by each state for registration of consulting foresters competent to provide advice and service to forest owners and operators; and inclusion of the woodlot in farm planning as an important resource of the farm. To be effective forestry should be an integrated part of the activities of soil conservation districts. Agricultural colleges should offer elementary courses giving prospective farmers, county agents, and other agricultural workers an understanding of the importance of woodlands in farm economy and some knowledge of their management. The participation of vocational agricultural teachers in instruction on farm forest management should be encouraged.

In the Pacific Northwest, conservation leaders have made rapid progress in the control of destructive practices on timber lands. The association's program shows an overwhelming interest in requirements by state law that forest owners avoid unnecessary destruction of young growing stock and follow practices that will maintain continuous wood fiber production on lands not to be devoted to other uses.

To stop forest destruction, reliance should not be placed solely upon voluntary and cooperative action. Statutory minimum requirements are necessary even though regulation alone cannot be expected to result in intensive forest management. Where they are well understood by forest owners and their communities, public controls over destructive cutting are a powerful aid to education.

Needed controls should be developed state-by-state as local conditions and forest practices require. Painstaking discussion and explanation of proposed controls with the forest

owners affected are essential in initiating such measures. The technical assistance to forest owners recommended in this program will promote compliance with required cutting practices.

The present situation demands that all states recognize their responsibility and opportunity for action. Over the country as a whole we have clear-cut, burned and farmed-out millions of acres which must be reforested. Nearly one hundred million acres need planting for soil conservation, watershed control, and wood production. The association's program calls for planting not less than twenty million acres of these lands in the next 12 years. Planting on the scale recommended will create new wealth for the nation and hasten the balancing of the forest budget.

At present there is a critical shortage of planting stock in all sections of the country and the program calls for increased output of state, federal and private forest nurseries. The problem of forest planting should be approached with special public assistance to small owners. Greatly increased planting activities are also important on publicly owned lands and on industrial lands where necessary to maintain full production of desirable species. Here is where the effort of many citizens interested in tree planting can be used to promote new methods found adaptable from arboretum practice.

The major points in the program for American forestry are:

1. Protection of all forest lands from fire, insects and diseases.
2. Education to reach the average citizen coordinated at the state level.
3. Technical assistance to owners of small forest properties by state forestry agencies.
4. A reforestation program to plant twenty million acres in the next 12 years.
5. Maintenance of adequate growing stocks through development of better cutting practices and elimination of destructive methods.

The program presents policies to be put into effect by public, legislative and administrative actions and by the supporting activities of industries, civic-minded organizations and

(Continued on Page Thirty-four)

Consider a Few Shrubs of Refinement

HAROLD T. ABBOTT*

REFINEMENT among shrubs may be thought of as the manner in which shrubs conduct themselves in the company of other plants and in the spaces allotted to them in the garden. To the gardener, this refinement may be a matter of degree, for the habits of plants, as with people, may vary considerably because of environment. It is therefore that we must always qualify our recommendations of certain shrubs as to their refinement with the assumption that, under less favorable circumstances, they will not prove worthy. In a region where there are problems of great extremes of heat and cold, of moisture and drought, problems of alkalinity, problems of maintenance, the average gardener is always on the lookout for shrubs which will respond to ordinary good care and will at the same time create the best effects in habit of growth, flower, fruit, foliage, autumn color, or in any number of other respects. Consequently, there is ever a tendency to be on a sort of scouting expedition in search of plant materials to meet special requirements for our particular gardening problems. The list of such materials could be endless, but here let us mention only a few which have possibilities for Eastern Washington plantings. Some of these shrubs are well tried and in general use. Others are not in the average nursery lists but should be before long.

Corylopsis platypetala

As the name implies, this shrub is similar in leaf characteristics to the *Corylus* or hazel nut. It is known as the Broadpetaled Winterhazel and its value lies in its early fragrant yellow blooms appearing before the bluish green leaves. In marked contrast to the catkins of the *Corylus* are the showy blooms of this shrub. Its height is comparatively low, averaging not more than five or six feet. By reputation it is not reliably hardy, but during the past winter in Spokane it has withstood many days of sub-zero temperatures. From all indi-

cations it should be as easily kept within bounds as limited planting areas might require. Although the foliage is of coarse texture, it is not so large that it cannot be tastefully used in all types of shrub plantings. It likes a well-drained location and will make a good showing in partially shaded exposures.

Lonicera praeflorens

In the same manner as the Winterhazel, this *Lonicera* blooms before the leaves. In early March it was in full bloom in Spokane. Its merit lies not in the display of its flowers but in the fact that it is one of the very first evidences of spring in the shrub garden. In landscaping use it is highly important that this shrub be planted against a rather dense background such as evergreens, a masonry wall, a rock outcropping, or an abruptly rising bank in order that these early spring blooms may show to advantage. Protection against winds and the direct late winter sun will tend to retard the blooming season and possibly prevent the burning of premature blossoms.

Prinsepia sinensis and Prinsepia uniflora

The *Prinsepias* are two very promising shrubs for use in the Spokane and Eastern Washington area. They are definitely classified as deciduous shrubs but they are the very first to produce complete new leaves in the spring. They are erect, much branched shrubs, and the winter buds commence to break with the first warm sun of a January thaw. At Manito Park this year, *Prinsepia sinensis* was showing its new green leaves in February and by the first of March some specimens were in full leaf.

Prinsepia sinensis has great possibilities as a new shrub material, particularly for hedges, and should be as worthy of consideration as the improved types of barberry. This species has short axillary thorns, the leaves are of a bright yellow green (not golden) color, the flowers are a clear yellow as many as four in number in the axils of the leaves. These flowers are followed by purple edible fruits

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similar to cherries, whereby it is known as the "Cherry Prinsepia."

Prinsepia uniflora is likewise of great merit. It has also the very early spring habit of coming into leaf along in late February and early March. Whereas *Prinsepia sinensis* reaches a height averaging six feet, *Prinsepia uniflora* is somewhat more dwarf and horizontal in its habit of growth. Its blossoms, fewer in number, are white, and the fruits exceptionally dark in color, in fact they are almost black. *Uniflora* has thorns which appear to be longer and stouter than those of *sineensis*.

Neither *Prinsepia sinensis* nor *Prinsepia uniflora* have as yet produced fruits in Spokane, but every effort is being made to protect the blooms this year from the injuries of late frosts.

Berberis triacanthophora

This evergreen "three-spine" barberry fortunately is one of the species which is apparently immune to the destructive wheat rust. Its narrow spiny leaves of a leathery texture are welcome in Spokane gardens where broadleaf evergreens of any sort are so eagerly sought. Through the past winter, when *Mahonia Aquifolium* has been badly burned, *Berberis triacanthophora* has come into the spring with practically no discoloration. Its spreading habit of growth invites its use against rock ledges or in plantings of shrubbery or relatively low height. Its fruits are black, inconspicuous, and of little landscape value.

Prunus tomentosa

In the spring, along with the forsythias, may be seen great plantings of the popular and highly satisfactory *Prunus tomentosa* or Nanking Cherry. It is one of the hardiest of the Prunus family and comes into bloom just ahead of the showy species of cherries, crabs, and the host of other spring flowering trees and shrubs. It is easily propagated from seeds or cuttings, but in spite of the ease of propagation, *Prunus tomentosa* is not a rank growing commoner in the shrub garden. Wherever it is used it is admired, whether it be in the season of its spring blooms in early April before the

leaves, in the summer with its clean dark green foliage and brilliant red edible cherries, or in the winter when its neat branching structure can be seen. *Prunus tomentosa* is, in this region, free from all insects and diseases. It does well in any ordinary soil conditions and adapts itself rapidly after transplanting. Shrubs propagated from seeds may assume many varying characteristics. Some may produce blooms which are decidedly pink; others in large plantings may appear to bloom much later than the typical species.

Kolkwitzia amabilis

Kolkwitzia, or Beautybush, has now become a favorite in gardens in all parts of the country even though it was introduced into America in comparatively recent years. Its graceful arching branches with delicate pink blooms add a real attraction to any planting. It is thought of as being not perfectly hardy, that it winterkills to snow line much as do some deutzias and buddleias. However, experience has shown that Eastern Washington growing conditions are exceptionally favorable for *Kolkwitzia*. While gardeners on the coast complain of *Kolkwitzia* growing rankly but devoid of great masses of bloom, here in Spokane similar shrubs produce year after year displays of surprising beauty. The secret of success with this shrubs seems to be in having due regard for good drainage, full sun, and little or no fertilization. As with deutzias, *Kolkwitzia amabilis* must have ample time to harden its wood before winter, therefore, too much watering in the late summer and early fall is to be avoided. In landscape work this shrub should be given a good deal of room for adequate development. Its attractiveness is in the long drooping branches which should always be preserved or be encouraged when pruning is under way.

Viburnum Carlesii and *Viburnum Burkwoodii*

Viburnum Carlesii and *Viburnum Burkwoodii* are classed among the refined shrubs particularly desirable in gardens of Eastern Washington. They are not tall in habit of growth, averaging five feet as a maximum. *Viburnum Burkwoodii* is considered a great

(Continued on Page Thirty-three)

A Commercial Lily Breeding Program

JOHN W. HEYER*

LILY BREEDING in America and particularly on the West Coast is rapidly assuming the status of an industry—an industry that has slowly and painfully passed through the stages of infancy and adolescence and is at the present writing looking forward to a sound and steady maturity. The last decade has really been the turning point and a beginning of the reawakening of public interest in the genus *Lilium*. Just why lilies have for so long remained the forgotten genus so far as intensive hybridizing is concerned, no one seems to know. Breeding and selection in tulips, daffodils, hyacinths, gladiolus, iris, dahlias, hemerocallis and almost every other major horticultural crop that comes to mind has reached the point where major advances and spectacular new types are largely a thing of the past and new seedlings are selected on the finer points of improvement over existing varieties. Not so with the lilies—the exact decade will witness new hybrids and types that were but an outside hope of the fancier and breeder of yesterday. Crosses which but a few years ago were hoped for, but never realized, are today being made on a large scale and the resulting seedlings are showing remarkable variations in color, form and habit.

Although the future seems to hold none but the best for the lily grower, it is, nevertheless, also going to show whether or not we have profited by the mistakes and errors of our fellow growers and breeders who have gone through corresponding stages with the daffodils, tulips, etc. Everyone now realizes that in the case of these crops far too many named varieties have been and still are offered to the trade. Growers and hybridizers became champions of their own works without bothering to compare their varieties with existing types, nor to fully and fairly test them as to ease of culture, hardiness and ability to persist under adverse conditions. The inevitable result was

that optimistic hybridizers named all of their best seedlings and hoped that their fortune was made. Duplication of names, types and the introduction of varieties that were so similar that it was almost impossible to tell them apart, eventually forced the retailer to list dozens and even hundreds of types—much to the bewilderment of the amateur gardener. Eventually, of course, the best varieties withstood the test of time and trial and emerged as the “popular varieties” which are the standards of comparison today.

Here at the Oregon Bulb Farms we have set up a long range breeding program in the hopes that the examples of the past will, in the future, aid us in preventing a recurrence of this same chain of events with lilies. Certainly there will be a mad scramble of all breeders, amateur and commercial, to “cash in” on the new types and forms that show up in the seedlings—as a matter of fact this situation exists today in a small way and it is most sincerely hoped that it will not develop into a case of competition between growers of the new market with only secondary regard to the quality of the plants creating that market.

As an introduction to a brief outline of our present breeding program, it should be pointed out that up to the year 1930 by far the majority of the lilies offered were species or wild forms of the true species and that over 80 per cent of all the bulbs offered were either imported or collected bulbs. Successful hybrids are few; the main exceptions being *L. testaceum* (a hybrid between *L. chalcedonicum* and *L. candidum* made before 1840) and several named forms of *L. elegans-Thunbergianum-umbellatum-dauricum* group (mostly of Dutch origin and usually infected with mosaic). New or unusual hybrids and types were reported by amateurs and occasionally pictured but none persisted long enough to reach large scale production and they soon became a matter of record only. Up to this time the larger commercial bulb growers in the United States, Holland and England had shown little

*Mr. John Heyer is lily hybridist for the Oregon Bulb Farms at Sandy, Ore., one of the largest bulb farms in the country.

interest in the lilies since they were (with the exception of *L. longiflorum*, the Easter Lily) strictly a garden subject. In addition, they were costly to grow, difficult to handle and many types were very subject to disease and definitely lacking in vigor. Fully cognizant of all the foregoing (and more) we felt that the results of trials of all the varieties then in the trade indicated that if healthy, sound bulbs could be grown in America, then a large group of hardy, desirable varieties could be grown on a large enough scale to justify the venture. In brief, a few years of testing small stocks of available varieties convinced us of the possibilities of the lilies and thus the overall three-part program was instituted. A program which, in a few years, has led us to the season of 1947 with some 30 acres of garden lilies in dozens of varieties, thousands of unnamed and unselected seedlings and the success of the lily as an easily grown, popular garden subject in America more or less assured.

The three parts of the general schedule of breeding and growing are:

1. The large-scale growing from seed of disease-free stocks of desirable species already in the trade.
2. Improvement of existing hybrids from the standpoint of vigor, hardiness and the color range of the flowers.
3. Large-scale hybridizing between all forms and species, old and new.

The first part of our schedule, limited to species and forms which come true from seed, was found necessary partly because stocks of healthy bulbs were not available and partly because what few we were able to obtain for the purpose of propagation were so poor that they were unfit to use. Therefore, seed was set on the original or "mother" stocks and the seedlings grown in isolation. As soon as the seedlings began to flower and set seed the original stocks were destroyed. This method was used in the foundation of new stocks of such varieties as *L. concolor*, *L. tenuifolium*, *L. centifolium*, *L. Martagon album*, *L. formosanum*, *L. amabile*, *L. amabile luteum*, *L. Maxwill*, *L. cernuum*, *L. Henryi*, etc. Although a

costly and slow process, the seedlings of the original types have proven to be extremely vigorous and free from disease. We also discovered that such hitherto scarce types as *L. amabile luteum* and *L. Martagon album* were scarce not because they were difficult to grow but simply because no one had taken the time and trouble to grow them from seed in large quantities. Fresh seed sown directly into the open ground has produced large blocks of these two desirable species and other formerly "rare" items not previously available to the American trade in any quantity such as *L. Maxwill*, *L. concolor*, *L. centifolium* and *L. amabile*.

The second part of the program, that of improving existing hybrids, was found necessary because practically all of the hybrids grown in the trial plantings showed definite symptoms of disease and a general lack of vigor. However, while they were certainly unsatisfactory as we first saw them, here and there we noted a variety that would undoubtedly become a satisfactory and popular garden plant—if only healthy, vigorous bulbs were available. The only way to reach that goal was the large scale growing of new stocks from seed. These named forms could not be expected to come true from seed as did the species and this fact eventually led us to our present system of growing lilies as "strains" or groups rather than the more time-honored and accepted method of growing only clones and named varieties. In order to more easily follow the development of this system, let us follow it through the improvement of a specific type of lily—the *elegans-umbellatum-dauricum* group.

From the initial plantings of these upright-flowered forms we noted that, while a few varieties were good as to color and form, the majority of the named clones were inferior and generally infected with virus disease, subject to basal and scale rot and lacking in vigor. We selected the two or three outstanding forms on the basis of color and vigor. The mixed pollen of these selected types was used on all of the next best plants and a large quantity of viable seed resulted. The seed-

lings were grown well isolated from the parent plants to prevent the spread of mosaic. When this first population of seedlings flowered, we found that we had a healthy lot of lilies exhibiting all the colors and combinations of colors of the parents. In addition we noted large number of forms that were definitely superior to the parental forms. By roguing out the few inferior types we had a fairly uniform group of plants bearing large, brightly colored flowers which varied in color through all the desired shades from clear yellow to red. Up to this point we had assumed that the ultimate disposition of this group of seedlings would follow the accepted pattern, namely, the selection of two or three outstanding bulbs (clones) to be propagated until the stocks of each were sufficiently large to permit introduction. The only obstacle to this method was that in the first place there were so many excellent forms that it was virtually impossible to pick the outstanding individuals and in the second place, to have done so would mean discarding thousands of seedlings, any one of which was superior to the then existing named varieties. Consequently it was finally decided to carefully select out the very best type of all colors and shades and introduce them as a mixed strain or group of hybrids. This particular strain is the group we are growing today under the name of the Golden Chalice Hybrids.

This method of growing large quantities of mixed but related types of lilies from seed, while not new in the field of commercial horticulture, had never been adopted to any extent by the commercial growers of bulbous plants. Here at the Oregon Bulb Farms we are now convinced that it has several important advantages to both the grower and gardener-consumer. In the first place, it enables the grower to get new hybrids on the market years sooner than he would ordinarily be able to select, propagate and introduce a single individual from any one cross. Even the most rapid-growing lily requires five or more years of propagation and careful culture before sufficient stock has accumulated to permit introduction. Second, the continuous growing of

seedlings from the best types of each population improves the quality of the strain from year to year. It is common knowledge that by the time most named varieties are offered to the trade, new seedlings have already flowered that are superior to the earlier selection. However, since the grower has a considerable investment of time, labor and advance advertising built into the clone, he usually feels obliged to go ahead and introduce it. Continuous crossing and selection within the strain eliminates the need of introducing obsolete and inferior varieties.

From the standpoint of the gardener, mixed hybrids are a definite advantage in that they enable him to buy new introductions at reasonable prices the first season that they are offered. Furthermore, he is virtually assured healthy, disease-free specimens, since the strain is a new group of young seedlings and has not been propagated for years with the attendant possibility of exposure to virus diseases.

Thus far the above system has been adopted for many types of lilies and several new strains have been introduced which are truly hybrid in character as well as some that are simply improved selections of a single species. Among the latter is a new improved strain of the lovely old *L. candidum* or Madonna Lily. Although normally sterile, large scale pollinations on all available types has resulted in the present group of large-flowered forms which are definitely superior to the original type.

Among the new strains of hybrids are the *centifolium* "Olympic Hybrids," a group of unusual white trumpets; the "Fiesta Hybrids," which are mainly crosses involving *L. Davidii* but exhibit a range of new colors unknown to that species; the Bellingham Hybrids, a colorful group of hybrids resulting from intercrossing many of the West Coast native lilies such as *L. Humboldtii*, *L. Parryi* and *L. pardalinum*; the Sierra Hybrids which are the progeny of complex crosses involving *L. tigrinum*, *L. elegans*, *L. umbellatum* and *L. Davidii*.

The third and last part of the program is really the foundation of the new strains. How-

(Continued on Page Thirty-four)

The Charles Houston Shattuck Arboretum of the University of Idaho

MERRILL E. DETERS*

THE University of Idaho can boast of the oldest arboretum in the West. Its beginning may be traced to the deep interest which its founder, Charles Houston Shattuck, had in tree planting and the idea that the state of Idaho could be made more beautiful and its homes more attractive through the use of trees. Although Idaho had millions of acres of superb forests, there were also large areas of grassland and desert where no trees grew. It seemed likely that the grassland areas would be suitable for the growing of certain hardy species of trees, but more information was needed to encourage such planting. With the development of irrigation, much of the unproductive desert land, particularly in Southern Idaho, was being transformed to rich farm land, providing ideal conditions for tree plantings. To provide the trees and knowledge regarding their growth and care was Professor Shattuck's chief research objective. In order to test the many tree species which might be useful for planting in Idaho and adjacent areas, he developed the idea of an arboretum. This would serve not only as a testing ground for trees but also as a demonstration to be viewed by students and visitors.

Other objectives which Professor Shattuck had in mind are listed in his Agricultural Experiment Station Bulletin No. 105, entitled "Trees—What, Where, When and How to Plant," a publication issued in 1918 by the Department of Forestry of the University of Idaho. These objectives are listed in the bulletin as follows:

"1. It is highly desirable that all students of plant life at the University should have access to the greatest number of growing plants including, of course, trees of all kinds. The arboretum admirably supplies this need.

"2. The students of forestry need such a working field because it supplies them with the very best illustrative and laboratory ma-

terial for courses in general forestry, silviculture, dendrology, forest mensuration, forest ecology, etc. The arboretum is a permanent experiment, changing yearly in much the same manner as does the forest, is subject to the same influences, and affords the best possible opportunity for observations and study of a large number of species assembled in one locality.

"3. Since the forestry department was expected to maintain a nursery of many thousands of trees of different species, the demonstration plot has proven extremely useful as a place in which to set out trees of all kinds where they may be observed as they become older, and measurements and records taken from year to year are kept. Much valuable information now at the disposal of the state has been thus obtained and the arboretum becomes more valuable for these purposes each year it continues to grow."

Professor Shattuck concluded his remarks on the objectives of the arboretum with the following statement: "In considering what species should be used it was thought best to try a few trees (five to 50) of a large number of species giving promise of success for shade and ornamental purposes in Idaho, and to plant several hundred of each species giving reasonable assurance of being suitable for mass growths, as woodlots, forests and windbreaks. This policy has been followed from the outset and the results will speak for themselves."

The first trees were set out in 1910 on the 12-acre tract dedicated to the arboretum and nursery. Mr. C. L. Price, whose services as nurseryman were secured in 1910, assisted with most of the planting. By 1914 the area was well planted. Planting stock for the early tests was obtained from the D. Hill Nursery Co. at Dundee, Illinois, and from the Biltmore Forest Nursery, North Carolina. One hundred and thirty different species were included in the original plantings and many more species were received later for testing through the

*Mr. Merrill E. Deters is professor of forestry at the University of Idaho.

cooperation of the Office of Plant Introduction of the U. S. Department of Agriculture. Over three hundred species have been planted up to the present time.

In 1917 Dean Francis Garner Miller succeeded Professor Shattuck as head of the School of Forestry but the same policy with respect to the arboretum was followed. The first deviation from the original policies of Professor Shattuck were made by R. E. Mc-Ardle when he became dean of the School of Forestry in 1934. He believed that the original purposes of the arboretum had been fulfilled and that little would be gained by continuing along the same lines. The following policy was formulated by him: "Beginning in 1935 the arboretum will be developed and maintained as a forest laboratory and museum, to include from three to six specimens of all trees which will grow in this locality. Since this refers to mature trees, obviously more trees of a given species will be planted to insure the desired number at maturity. Priority will be given to commercially important North American species. Following in priority will be included minor commercially important species and exotic species. All trees will be allowed to grow naturally and no cultural work will be done other than to keep the arboretum open to foot travel. Some thinking will, of course, be necessary to produce the best specimen trees. Two exceptions will be made to this policy in that two even-aged plots of *Pinus Strobus* (Eastern white pine) and *Pinus monticola* (Western white pine) will be used by silviculture classes for experimental purposes."

In accord with this policy the arboretum was surveyed and divided into plots, each one including one species or group of them in the case of mixed plantings. All trees were classified according to plot locations and each tree was tagged with a zinc label. A map was prepared showing the plots and the location and number of each tree within a plot. It is possible therefore to determine quickly by reference to the map the location of any tree or group of trees. The 1935 records show a total of 11,375 trees comprising 91 different species. Since that time 16 additional species

have been added. A comprehensive thinning program initiated in 1941 has reduced the number of trees by 2,125.

The arboretum was officially named in 1933 when the Associated Foresters of the University of Idaho recommended to the Board of Education that it be named the Charles Houston Shattuck Arboretum. The University regents so named it on June 12, 1933.

A major use of the arboretum is as a field laboratory for the teaching of dendrology. It affords students an opportunity to see and learn many species of trees not native to Idaho. While there are no regularly conducted tours through the arboretum, interested groups may obtain by arrangement the services of a staff member of the Forestry School to explain points of interest about the trees.

Located as an integral part of the university campus, the arboretum provides a beautiful background for many of the buildings. In the fall season especially its variegated colors provide a most artistic scene. It is probably the most popular place on the campus during the delightful days of spring and fall when a stroll through the arboretum does much to lighten the human spirit.

Price's Green, developed in honor of the nurseryman who planted many of the trees, furnishes a picnic spot for small groups of people. Campus groups, Girl Scouts and Boy Scouts often use these facilities.

Thus the arboretum serves many purposes, and the policy will be to continue and to expand the services which it can be made to offer. It is hoped that additional land may be acquired soon so that species now lacking may be planted.

* * *

Approximately 50 heathers have been set along the trail leading up Rhododendron Glen, closing up a gap between previous plantings of that family.

* * *

Ornamental signs have been planned for Arboretum entrances, describing the area, stating its aims, and asking public cooperation in its maintenance and in avoiding destructive and careless actions.

Flowering Cherries

ELIZABETH H. HANLEY*

A RECENT VISITOR exclaimed, "We were prepared for your magnificent displays of rhododendrons and azaleas, but no one told us of your flowering cherries!"

Our flowering cherries are a dominant note in our ornamental planting and each year finds more specimens planted in private gardens and in public parks. Long ago our first garden enthusiasts discovered that oriental cherries would grow and thrive here. Ferdinand Schmitz grew them with joy to himself and his neighbors in West Seattle. Today these beautiful trees are now one of the chief ornaments of Schmitz Park.

Jacob Umlauff, Seattle's outstanding early-day superintendent of parks, propagator and discriminating lover of trees and shrubs beautiful, planted flowering cherries liberally in Seattle's parks and along its first boulevards. The specimen trees he planted in Volunteer Park are especially fine; their grouping and placement excellent. In this park are to be found many of the loveliest of the oriental cherries. There are good specimens of the representative species and of all forms.

The Seward Park planting, after the oriental manner, is a good example of this treatment. The specimens are well grown.

Along the shores of Green Lake the flowering cherry trees will sometime be viewed as they are in old Japan.

The University of Washington campus has a comprehensive and well-chosen collection of flowering cherries, which in a few years will be spectacular.

Beautiful as all of the above-mentioned collections of flowering trees are, they will be surpassed by those in the University of Washington Arboretum. Along Azalea Way the flowering cherries are now growing large enough to show what a splendid background they will form for this pagentry of color.

*Mrs. E. B. Hanley, amid the activities of a busy life, has always taken a lively interest in all things horticultural. Many of the fine cherries mentioned in the above article are growing happily in the garden at the old family home (Hanley-lands) in Southern Oregon.

Flowering cherries are comparative newcomers to European gardens. The first, a double white, was brought to England in 1822. In 1862 George Rogers Hall brought fifteen varieties to the United States. In 1890 seeds of the single varieties were sent to the Arnold Arboretum.

Prunus serrulata is the largest and tallest of the flowering cherries. It is thought that many of the best varieties are derived from this species. The most beautiful of all the wild species is *Sargentii*. It is a large and long-lived tree. Nearly all the Japanese cherries with double rose colored flowers are forms of this species. Dr. Ernest Wilson advises us, "This is the stock on which all of the class should be grafted to make them long-lived trees in America."

In the Pacific Northwest, as in Japan, the earliest flowering cherry to bloom is *Prunus subhirtella* — the Higan-Zakura or "Spring Cherry." According to "The Gardener's Chronicle," the variety *autumnalis* was first grown in America at T. E. Proctor Arboretum at Topsfield, Massachusetts, in May, 1909. In the fall of 1912 it was exhibited in bloom before the Royal Horticultural Society in England by Col. Stephenson Clark and received an award of merit. In our climate it blooms at least twice a year, some trees have occasional blossoms throughout the winter. In Japan it is known as "Jugatsu-Zakura," that is, October flowering. This is the only variety with this habit. This tree forms a low-crowned head with spreading branches. The leaves are slender, pointed and sharply serrated. The flowers are semi-double, produced in clusters or singly along the branches. They are fragrant, opening white but turning pink in the center with age. An excellent tree for any garden.

"Ming Shing"—a *subhirtella* type, imported from Japan by the late Mr. Case of Vancouver, Washington, is of great loveliness. It is described as "a fairly tall tree, upright, with interesting twiggy branches literally covered with delicate rose colored blossoms. An ethe-

real tree as dainty and sweet scented as a bride's bouquet."

The "Whitcomb Cherry" is a variety of *subhirtella*, which originated in the gardens of David Whitcomb in Woodway Park north of Seattle. It grows into a low crowned spreading tree with rose colored flowers, larger than *subhirtella* or *autumnalis* and longer lasting.

"Fukubana" is the last of the *subhirtella* types to flower. Its double deep pink flowers start to open when the earlier varieties are gone.

"Shidare-Higan," a variety of *Prunus subhirtella*, has a weeping habit. The branches are slender and pendulous. The degree of weeping varies. The flowers are similar to the *subhirtella* type. This tree grows to a great age. One in Kyoto is said to be three hundred years old.

"Yoshino" is probably the best known of all the flowering trees in that marvelous planting around the tidal basin and memorials in Washington, D. C. This variety grows to fifty feet. The crown is broad and wide spreading; the pale pink flowers blossom in clusters of two to five along the stem. The flowering time varies from late March into April.

"Shirayuki" is also an early bloomer. It follows Yoshino. Its flowers are white, the buds are pink tinged, are borne in clusters of three or four. This variety is not fragrant.

"Takinioi" (fragrant waterfall) is the best of the single white group. The flowers are of strong fragrance. They are borne in clusters of three or four. The buds are pink but the opened flower is white.

"Mikurumagaeshi" (returning the carriage) is so spectacularly beautiful that legend has it that a nearly emperor after passing, returned again to view it—hence its name. This variety has bronze-green foliage, deep pink pointed buds, flowers single white with pink tinge, and borne in grouping clusters of three to four. The individual flowers are two inches across.

"Ariake" (dawn) resembles the above variety but has almost white flowers which are inclined to have extra petals and are very much smaller.

"Shogetsu" (fairy queen) has double pink flowers, paling as they age. John Grant rates this variety as the daintiest of all the doubles. He also rates its foliage as good.

"Botan-zakura" has very double pink flowers with a deep pink center.

"Fuku-rokuju" is a striking tree with a stiff upright habit of growth. It has a well-rounded compact crown and its foliage is bronze-green. The pale pink double flowers are borne in clusters toward the end of the branches. The individual flowers are two inches across with three or four to a cluster.

"Amanogawa" has the fastigate habit of a Lombardy poplar. Its flowers are fragrant, less double than Fuku-rokuju, delicate pink and attractive.

"Ojochin" is another variety with large flowers. The individual flowers are two inches across and are borne in large loose clusters. The foliage is a striking brown. This variety always occasions comment.

"Fugenzo" (James H. Veitch) is rated by Dr. Ernest Wilson as one of the loveliest of the rose colored varieties. It grows to be the largest and is probably the oldest cultivated. Its light pink flowers are one and seven-eighths inches wide and are borne in clusters of three or four.

"Shirofugen" is similar to the above but has lighter flowers. Note: "These two are distinguished from all others of this class in having two tiny green leaves, known as carpels, folded in the center of the majority of their flowers."

"Kwanzan," also known as Kansan, Sekizan and Sekiyama, is a familiar tree in Seattle. It is upright in habit and grows to twenty-five feet and over. The deep pink double flowers grow in independent clusters of three or four. The individual flowers often measure two inches across. The foliage is deep bronze. It is one of the latest to bloom.

"Kirin" closely resembles Kwanzan but the clusters are more erect and it blooms a little later.

"Chinensis" is another late bloomer and one of the very best. Its lovely scented flowers are a pink which deepen on the flower's edge. This variety comes into bloom before the

leaves appear. The late Mr. Case thought very highly of this variety.

"Shirotae" (Mr. Fuji) is the best representative of the double white form. It is a wide-spreading, flat-topped tree of good habit. The double or semi-double flowers are borne in profusion in short stemmed clusters of two to five. The individual flowers average one and one-half inches across.

"Amayadori" resembles Shirotae, but the flowers are smaller and faintly tinged with pink.

"Sieboldii" (Watereri) (Naden). The distinguishing feature of this variety is that its leaves are clothed with soft hairs. The flowers are rose pink in color, double and semi-double in form.

"Lannesiana"—The numerous forms of this variety have fragrant flowers. They are mostly white or pale pink, but one, *grandiflora* or Ukon, has chartreuse-green flowers.

"Gyoiko" is another exotic. The color is deep creamed yellow, marked with greenish stripes and narrow red lines in the center of the petals. The flower turns pink with age.

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Trees of this species grow to thirty feet tall and have wide branching heads.

One could list innumerable varieties—the Japanese list over a hundred but the above list gives some idea of the great variety of the form, blossom, and shape of trees of the oriental cherries. They all grow well in the Pacific Northwest. Their culture is simple, their pests are few and, once planted, are a never-ceasing joy. Any good sandy loam is suitable; sunshine is necessary. Advice for pruning can be given in one word, "don't." Growth should be controlled by removal of twigs when growth starts. If necessity demands that large limbs be cut, do so in June.

In this locality so far, the peach scale is the only pest which attacks the cherry. In some localities borers sometimes cause damage. Lime and sulphur spray should be applied in late winter. The proportions are one gallon lime-sulphur to eight of water, or miscible oil, one gallon to fourteen of water.

Propagation is by seed, grafting or budding. Choice of root stock is most important.

A plan is under way to standardize the nomenclature of these lovely flowering trees, whose Japanese names seem harsh to our American ears, but to the Asiatic the names signify the embodiment of loveliness. We must remember that these most feminine of trees are named after the beautiful fairy-like princess, Konohama Sakura. The flowering cherry tree to this day is known as "Zakura" in her honor.



Trash receivers have been placed at the summer house atop Rhododendron Glen, where visitors' litter has been most prevalent.

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The Gay Gaillardias

SUSANN FRY BIDDULPH*

ONE of the most dependable plants in the summer and fall garden is the gay gaillardia, a member of the huge Composite family. It yields quantities of large, brilliantly colored, long-stemmed flowers throughout the summer and fall. They are easily grown, thriving best in well-drained soil and full sunlight and are excellent for both beds and cutting.

The genus gaillardia was first named by M. Fougeroux de Bondaroy in 1786 in honor of M. Gaillard de Charentonneau, a patron of botany in France. The seeds of *G. pulchella* had been brought from Louisiana and grown in a French garden. Seeds from Paris were sent to England about 1787 and Drummond introduced various forms of the annual gaillardia from Texas into the English gardens between 1833 and 1835.

Gaillardia is a native of the Americas. Only one species occurs outside North America, *G. megapotamica*, found in the Argentine. Within North America the species is distributed from British Columbia and Saskatchewan southward through the Rocky Mountains and Great Plains states into Mexico. It also extends along the Gulf of Mexico to Florida. Of the 17 North American species only one occurs in Washington and this only east of the Cascade Mountains. However, it is from this

native species, *G. aristata*, that all the perennial forms of the cultivated *G. grandiflora* are derived.

G. aristata was collected by Lewis and Clark in 1806 and was well known in English gardens by 1813. The fact that both *G. pulchella* and *G. aristata* were known in England at that time resulted in their confusion, for the two appear very similar, being separated principally by the annual habit of *G. pulchella* and the perennial habit of *G. aristata*. You may also be interested to know that the South American gaillardia has been known for a long time, having been described by Sprengel in 1826.

Gaillardia aristata, which includes Eastern Washington as part of its native range, is commonly known as the Blanket Flower. It is an herb one to two feet high with a perennial root. The leaves have short petioles or no petiole at all and are usually coarsely toothed or lobed. Both the stem and the leaves are covered with hairs. The ligules or "petals" are about an inch long and yellow or yellow with purplish bases. The disk or "center" is purplish brown or occasionally all yellow. The small seeds produced by the disk flowers are covered with silky white or brownish hairs.

The horticultural forms of gaillardia are large, gorgeously colored, daisy-like single flowers or double flowers made up of numerous tubular or quilled "petals". Their colors range from a rich, clear yellow through orange and all tones of red. Often the colors are combined, the base of the ligule or "petal" being red and the tips yellow. Some of the more recent introductions have flowers of extraordinary size, at least four to five inches in diameter.

The perennial forms are propagated by division, seeds, cuttings in August or September, or by root cuttings in early spring. Since the seeds of the horticultural forms do not always breed true propagation by division or cuttings is best.

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I hereby apply for membership in the Arboretum Foundation and remittance for same is enclosed to cover dues for the next succeeding 12 months.

Name

Address

All memberships are non-assessable.

*Garden Clubs and Independent Arboretum Units formed after January 1, 1946, affiliated membership, \$10.00 minimum. Special rate privileges to members of Affiliated Garden Clubs and Arboretum Units.

The schedule listed above has the following exceptions:

- a. That members of Garden Clubs, affiliated with the Arboretum and having membership of not less than \$10.00, shall be entitled to a \$2.00 or Associate membership.
- b. That members of Arboretum Units shall be entitled to a \$2.00 or Associate minimum membership.
- c. This schedule applies only to new memberships.

Editorial

IN AN article entitled "The University and the Arboretum," published in the Foundation's recent brochure, *Your Arboretum*, it was stated in part: ". . . In 1947 the Arboretum was included as part of the regular University budget. Funds so appropriated have been designated to provide labor, equipment and other items needed for the direct work of planting this vast garden and keeping it in the best possible condition . . ."

A glance at Mr. Brian O. Mulligan's early summer report on progress, which we are presenting as the leading article in this issue of the BULLETIN, will readily show how those funds are currently being used. A visit to the Arboretum will bear further evidence that the money has been well spent. The new vistas, the new planting areas, the general spick-and-span appearance of old familiar spots brought many an expression of satisfaction from among the thousands who visited the Arboretum during the recent Rhododendron Show.

In fact, from the surface of things one might easily become complacent, allowing his interest in aiding the Arboretum's program to subside.

Yet the belief that the Arboretum is—as we hear it so frequently phrased—"supported by public funds" is something of a half-truth. The rest of the story is that aid from the Foundation and from other unofficial sources is today as urgently needed as ever.

To support this statement we have at hand the following communication from Mr. Mulligan:

"Owing to the amount of cleaning and clearance work which had first to be carried out during the winter and early spring months it has not been possible to prepare sufficient ground to receive all the plants in the nursery requiring removal to permanent places, although considerable numbers of azaleas, camellias, Japanese maples and quinces, rhododendrons, conifers and others have been transplanted, and the process is still (mid-May) being continued.

"There remain, however, sufficient plants either in the nurseries or propagating houses



The Arboretum Foundation

MEMBERSHIP NEWS

SPRING, 1947

*Published Quarterly at 516 Medical Arts Building,
Seattle, and Distributed to All Foundation Members*

DONATIONS RECEIVED Since our last issue several donations have been sent in, earmarked for special uses at the Arboretum:

1. From the Mercer Island Garden Club, \$100, allocated at Mr. Mulligan's request for maintenance purposes.
2. From the Seattle Garden Club, \$100, to increase the collection of Magnolias by a number of plants of several Chinese species not so far grown in the Arboretum, including M. mollicomata and M. Sprengeri diva. Obtained in England, the plants are expected to arrive in the fall.
3. From Unit 1, Lake Washington Garden Club, \$25, for books.
4. From the North End Flower Club, \$10, to be applied to the Kingdon Ward expedition, to secure seeds for the Arboretum.
5. From Mrs. W. G. Roening, \$1, to be applied to the Kingdon Ward expedition fund.
6. From Acquisition and Plant Advisory Committee, \$32.95 for purchase of books for Arboretum Library.

PHOTO CONTEST REMINDER The second annual photographic contest, which has sent scores of professional and amateur camera artists into the Arboretum since early spring, is scheduled to close August 15. Anyone may compete for prizes. If sufficient and worthy material is received, a public showing of contest photos may be arranged.

- SPEAKERS WANTED Frequent calls come to the Foundation office, asking for names of speakers for club meetings and the like. Some want technical talks, some non-technical; all are interested in gardening problems, new ideas for plantings, information on the Arboretum itself. The Foundation endeavors to satisfy these requests whenever possible. To avoid overburdening our regular speakers, the Foundation would like to increase its speaker roster. Will you send us your name if you will be willing on occasion to help extend the good will of the Arboretum and to carry some of your gardening enthusiasm to others. Let us know whether you will speak to afternoon or evening meetings or both, and on what topics.
- PHOTOS AVAILABLE Mr. Robert Ratliff, a young commercial photographer, took extensive photographs of various exhibits at the recent Rhododendron Show. These photos include both mass exhibits and individual plants and specimens. Some of his photographs accompany the report on the Rhododendron Show published in the Summer Bulletin. By special arrangement with the photographer, prints of these black and white photos up to the 8x10 size may be ordered through the Foundation office at cost. The price of the photographs is \$1 per print, picked up at the office. If you wish prints mailed; kindly supply the postage.
- SUNSET ARTICLES Sunset Magazine for May carried the second in its series of articles on the Arboretum. Future articles in this series will be written by Mrs. Nancy Davidson, an Arboretum enthusiast from Bellevue.
- BOOKS PURCHASED The Arboretum library has been enlarged by nine new works since April 1. Now on the shelves are:
Wen-Pei Fang, Icones Plantarum Omeiensium, Vol. 2, No. 2.
Ellis and Swaney, Soilless Growth of Plants.
Sudworth, George B., Forest Trees of the Pacific Slope.
Wilson, Ernest Henry, The Cherries of Japan.
Fowler, H.W., A Dictionary of Modern English Usage.
Hosmer, Ralph S., Cornell Plantations.
Hutchinson, John, A Botanist in Southern Africa.
Preece, W.H.A., North American Rock Plants.
Sargent, Charles S., Trees and Shrubs.

MORE
BOOKS
NEEDED

The Arboretum's library continues to grow, yet there is still a need for certain books, in addition to those named in our last issue. Additional needs are for the following: Keays, F.L., Old Roses; Wyman, Donald, Hedges, Screens and Windbreaks; Adriance & Brison, Propagation of Horticultural Plants; Blair, M.F., Practical Tree Surgery; Pirone, P.P., Maintenance of Shade and Ornamental Trees; Andrews, H.C., The Heather Monograph, Genus Erica. To avoid duplication, any individuals or groups desiring to make purchases to fill these needs should check first with the Foundation office.

NEW
BROCHURE

More than 5000 copies of the Foundation's new brochure, Your Arboretum, have been distributed. Many were requested by visitors to the Rhododendron Show. A copy with an accompanying letter has been sent to the editor of every daily and weekly newspaper in the State of Washington. The supply is now virtually exhausted, and a reprinting may be necessary.

CLUBS,
UNITS
TOUR
ARBORETUM

Since mid-April, sixteen clubs and Arboretum Units have been conducted on tours of the Arboretum. They include, Unit 20; Olympic View Garden Club; The Girl Scouts; Chapter C-B, P.E.O.; Unit 23; Unit 7; Des Moines Garden Club; Bainbridge Island Garden Club; Greenwood Music and Art Club; North End Flower Club; Shelton Garden Club; Medina Garden Club; Unit 33; Unit 39; Alpine Club; Mercer Island Club.

TALKS
GIVEN

- April 16. Speaker, Mrs. W. A. Fisher. Meeting of Wedgewood Park Garden Club. Subject, "Garden Design."
- April 28. Speaker, Mrs. Arthur Krauss. Meeting of the Seattle Photographic Society. Subject, "Picture Possibilities in the Arboretum."
- May 1. Speaker, Mr. Carol Weiting. Roosevelt High School Vocational Conference. Subject, "Gardening."
- May 7. Speaker, Mr. Milo Ryan. Radio KJR. Subject, "The Arboretum and the Rhododendron Show."
- May 7. Speaker, Mrs. Arthur Krauss. Meeting of the Soroptimist Club. Subject, "The Arboretum."
- May 9. Speaker, Mrs. J. Swift Baker. Radio KOMO. Subject, "The Rhododendron Show."
- May 9. Speaker, Mrs. Arthur Krauss. Radio KXA. Subject, "The Rhododendron Show."

- TREE PHOTOS WANTED** Mr. A. G. Hall, Director of Information, The American Forestry Association, Washington, has requested the Foundation to aid in a hunt for photographs of trees--buds, leaves, flowers, bark, fruit and summer and winter aspects--to complete their needs in a forthcoming new edition of their book "Knowing Your Trees". The list of their specific needs is too long to publish here, but any members who have taken photos of trees may check the list, which will be on file in the office.
- FLOWERS TO ORTHO-PEDIC** Flowers unclaimed by their exhibitors at the close of the Second Annual Rhododendron Show were sent as a gift to the wards of the Children's Orthopedic Hospital.
- NEW MEMBERS IN ARBORETUM FOUNDATION** Mrs. R. W. Isaacson; Magnolia Peninsula Garden Club Unit 6; Mrs. George W. Cady; Mrs. Norman Satra; Mrs. A. J. Kirkpatrick; Mrs. F. T. Isaacson; Mrs. F. B. Alford; Mrs. M. S. Fickson; Olympic View Garden Club; Mrs. G. Bailey; Mrs. Robert LaBow; Mrs. R. C. Lenfesty; Mrs. J. F. Smith; Mrs. Craig Wallace; Mrs. John Cortally; Mrs. George P. Horton; Mrs. C. Senecal; Mrs. Leonard Wilcox; E. Massen; Mrs. L. L. Weller; Mrs. A. C. DeVoe; Mrs. Chester Paulsen; Mrs. W. A. Sendell; Mrs. Victor Denny; Mr. Arthur P. Johnson; Mrs. Reilly Atkinson; Mr. Frank McCaffrey; Mrs. C. Spencer Clark; Mrs. Wendell Trosper; Magnolia Peninsula Garden Club Unit 7; Mrs. Jean Rahn; Mrs. C. H. Gillette; Mrs. M. H. Hueschale; Mrs. V. J. Rose; Mrs. J. W. MacDonald; Mrs. R. E. Landweer; Mrs. R. E. Ryberg; Lyman Graydon Louis; Mrs. Frank Kates; Mrs. Paul McLean; Mrs. Edgar Snyder; Mrs. Otto B. Gufler; Mrs. J. L. Wakefield; Mrs. Philip Hart; Mrs. Gertrude Powers; Mrs. Carl Birkenmeyer; Mrs. Ellis Gilbert; Mrs. W. F. Lea; O. C. Davenport; Mrs. W. J. Bourcier; Mr. Frank A. Carson.
- REINSTATEE** Mrs. R. Denny Watt; Mrs. Addie S. Pate.

to occupy the present staff for probably the next two planting seasons, and except for some special requirements such as some of the newer English rhododendron hybrids, and certain less common trees and shrubs of which we have few or no examples at present, it is not expected that many plants will need to be bought during that period.

"Instead of being able to expand our staff for 1947-9 as anticipated—by perhaps five or six men—a drastic cut in our estimates has meant that we have only been able to hire one more full-time and one part-time man.

"A recent rise in salaries has also handicapped us in this respect by absorbing more funds under this heading.

"It is very desirable that we should clean up some of the weedy sections along Azalea Way, in Rhododendron Glen, in the nursery and elsewhere during this summer; if sufficient funds were available to employ two or three men at this work for the next four months the results should be evident to all who visit and care for the Arboretum."

There are two courses by which through Foundation cooperation the Arboretum can be provided with these additional maintenance funds.

First, we can and do urge individuals and groups to make donations specifically earmarked for the purpose, which the Foundation will transmit to the University with its regular monthly contribution.

Second, we can and do urge individuals and groups to make every possible effort to obtain new active, contributing, supporting and sustaining Foundation members, whose annual dues will help very materially in increasing the amount of the Foundation's regular monthly contribution.

While cooperative response to the first of these suggestions will help solve the immediate problem as outlined by Mr. Mulligan, the second is, in many ways, of greater value, since it will enable the Foundation year by year to do more richly the work it has taken on itself to do.

About Our Name

FOR some time we have been holding on file a letter from Mr. Alfred Rehder, associate professor emeritus at the Arnold Arboretum, Harvard University. It has been shown to visitors at our office, whose opinions have been sought, and often readily given.

Finally, in the hope that BULLETIN readers may have some workable suggestions in line with Mr. Rehder's comments, part of his letter is herewith passed along:

"... I ... take this occasion to make some remarks in regard to the title of your publication. The present title, 'Arboretum Bulletin', is puzzling, because one will ask, 'bulletin of which arboretum,' since there are quite a number of arboreta which issue bulletins or similar publications, as Arnold Arboretum, Morris Arboretum, Morton Arboretum, Hemlock Arboretum, etc. Why not call it 'Seattle Arboretum Bulletin?' This would be better than 'Washington Arboretum Bulletin' which might lead to confusion with Washington, D. C., or with Washington University in St. Louis. ... For the present I am using in my Bibliography the abbreviation 'Arbor. Bull. Seattle' (Arboretum Bulletin Seattle), citing the volume and issue numbers as given with each index."

There is much to be said for Mr. Rehder's point of view. Should the BULLETIN's name be changed, and if so to what?

* * *

In keeping with its new, modernized cover, *The Arboretum Bulletin* now bears a new name-plate at the top of page one. It is the work of Mr. Alanson Davis, Kirkland artist.

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The Second Annual Rhododendron Show

DONALD G. GRAHAM, *General Chairman*

THE Second Annual Rhododendron Show was held in the University of Washington Arboretum at the north end of the Madison Street playfield. The exhibits were housed in a large tent approximately 60 feet by 120 feet. Parking facilities were provided in close proximity to the tent along the roadway parallel to the boulevard.

Approximately 7,000 people attended the show. The weather was perfect and the exhibits kept in good condition for the two-day period, helped, no doubt, by cooling the tent with sprinklers which operated outside and on top of the tent.

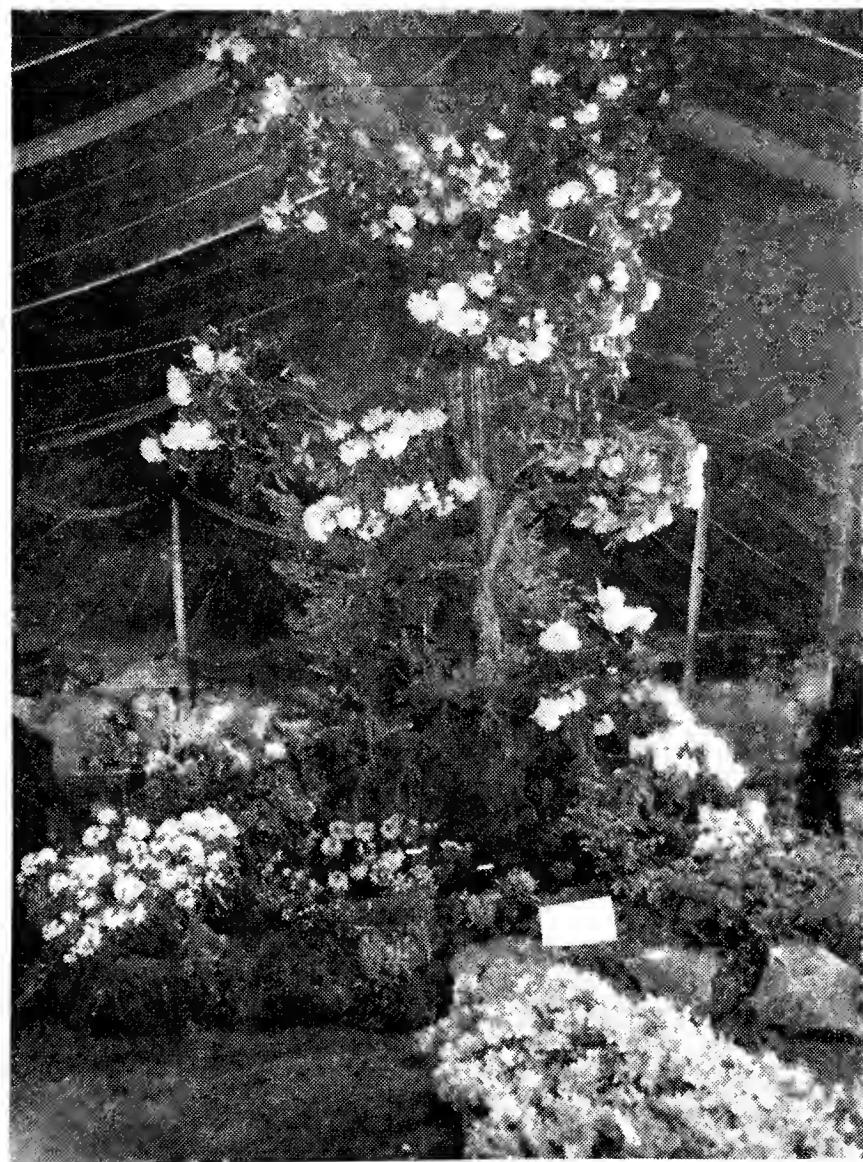
A great deal of the credit for the success of the show should go to Mrs. Henry Isaacson, co-chairman. She was most resourceful in planning the show and worked with great zeal and efficiency.

Mr. Otto Holmdahl, landscape architect, drew up the plan for the tent and assisted with classifications. It was the general consensus of opinion that the arrangement of the tent was a great improvement over the show last year, as the large crowds were accommodated without lineups or blocking of the aisles.

For the first time there were mass exhibit classes. The entire outside border of the interior of the tent, ten feet in width, was set apart for mass exhibits, and the cooperation of both commercial and private growers in making entries in these classes contributed a great deal to the colorful display.

The commercial growers included Far West Nursery, Bothell; Lester E. Brandt, Puyallup; Mountain Meadow Nursery, Monroe; Richmond Nurseries, Richmond Beach; Bonnell Nurseries, Renton; Foster's Gardens, Malmo Nurseries and Hainke's Nursery, all of Seattle; Hopkins Nursery, Bothell and Endre Ostbo, Bellevue; other exhibitors of mass plantings, non-commercial, were Mr. and Mrs. Ralph DeClement, Bremerton, and Mr. James Brennan.

Again the show was accredited by the American Rhododendron Society. Mr. Gordon Prentice of Prentice Nurseries, Seattle, arranged a very spectacular exhibit for the society which occupied a space in the center of the tent approximately fifteen feet square. Rocks were used, as well as an artificial waterfall, and large rhododendron plants were skillfully placed on trees reaching to the top



The exhibit of the American Rhododendron Society at the Second Annual Rhododendron Show, prepared by Mr. Gordon Prentice. See comments in accompanying report.

of the tent, giving a very realistic effect of a rhododendron planting in a woodland area with a water setting. This exhibit was the most spectacular in the show and the committee is appreciative of the society's cooperation and of Mr. Prentice's services in planning and executing this novel display. Incidentally, many of the plants in this exhibit, as well as the waterfall effect, had been used by Mr. Prentice in a similar, although larger exhibit two weeks earlier at the flower show in Oakland, California, where it won first-prize honors.

Also of particular interest to members of the Foundation and to the general public was the mass exhibit—non-competitive—entered by the University of Washington Arboretum itself. The main background of this display was supplied by two large plants of *Rhododendron Loderi*, interspersed with Japanese maples, both purple- and green-leaved. In front of these were bushes of the pink Lady Clementine Mitford, and Mrs. E. C. Sterling, and at one end a specimen of Armistice Day laden with blood-red flowers.

Azaleas were prominent in the foreground: *A. pulchra Maxwellii*, bright cherry-rose, the soft creamy-white *A. Daviesii*, and in front of Armistice Day a group of the sweet-scented yellow *A. lutea (pontica)*. In the center, partially overhung by a bronze-leaved Japanese maple, were small but freely flowering bushes of Rhododendron Fabia, the beautiful hybrid

between *R. Griersonianum* and *R. dichroanthum*.

The judges, appointed by the American Rhododendron Society, included Mr. John Henny, Mr. Theodore Van Veen, Mr. George D. Grace, Mrs. Ruth Martin Hansen, Mr. Hansen and Mr. P. H. Brydon.

Mr. Edmund de Rothschild, honorary judge, participated in all the awards, and the committee desires to express its appreciation to Mr. de Rothschild, who made a special trip to the show for the purpose of assisting in the judging. Mr. de Rothschild's father, Lionel de Rothschild, was the outstanding rhododendron hybridist in England prior to his death in 1942. The magnificent gardens at Exbury in England are now owned by Mr. Edmund de Rothschild and under his able direction the development of this magnificent genus is being carried forward notwithstanding the difficulties which post-war England is experiencing.

The success of the Rhododendron Show is largely due to the members of the various committees contributing to its staging. This year the committees were exceptionally efficient, and thanks are extended to the chairmen and to the members of the several committees who worked both before and during the show to make it a success. The committee chairmen were as follows:

A mass plant exhibit of rhododendrons, which won for Mr. and Mrs. Ralph DeClement, Bremerton, Washington, first prize in Class 1 at the Second Annual Rhododendron Show.



Ticket sales at Arboretum: Mrs. Carl Ballard.

Information: Mrs. J. Swift Baker.

Finance: Mrs. Frederick A. Bunge.

Staging: Mrs. Brian O. Mulligan.

Placement: Mrs. Louis C. Oulmonn, assisted by Mrs. T. C. Frye and Mrs. Burton Wheelon.

Amateur and Garden Club Exhibits: Mrs. John E. Ryan, assisted by Mrs. Donald McDermott.

Backgrounds: Mrs. F. T. Isaacson, assisted by Mrs. Frank Preston and Girl Scouts.

Flower Registration: Mrs. Herbert Coe, assisted by Mrs. Harry Coe.

Arrangements in containers: Mrs. W. L. Feely, assisted by Mrs. Thomas Balmer.

Classification: Mr. Brian O. Mulligan, assisted by Mrs. T. C. Frye and Mrs. Loren Grinstead.

Hostesses: Mrs. Arthur J. Krauss.

Commercial Exhibits: Mr. Earl Hubbard.

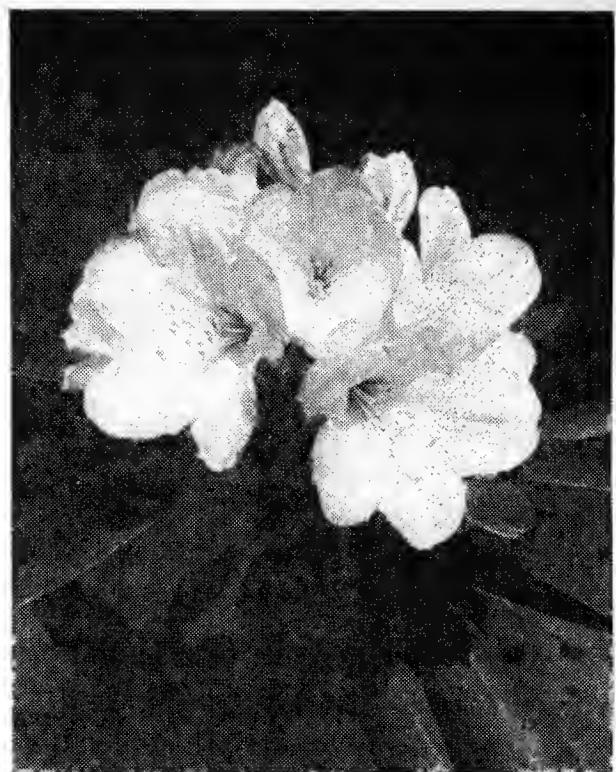
Publicity, General: Mr. Milo Ryan.

Society Publicity: Mrs. James W. Wylie.

Poster Distribution: Mrs. Charles E. Armstrong.

Lettering: Miss Gene Webb.

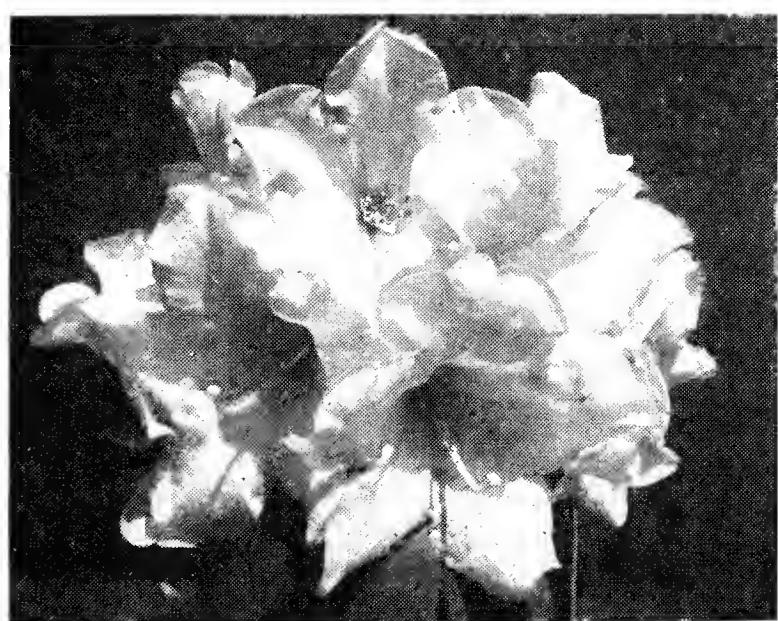
During Sunday afternoon, Mother's Day, a 40-piece concert band provided background music, under the direction of Mr. Jackie Souders. This band was a donation of the Musicians' Association of Seattle, in cooperation with the American Federation of Musicians, to whom the committee expresses sincere appreciation.



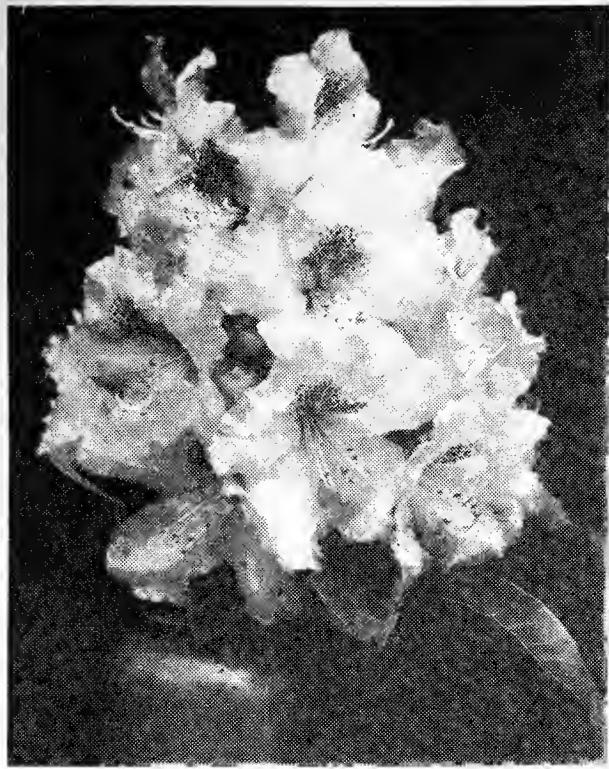
Snow Queen (*Halopeanum x Loderi*), awarded first prize as the best white hybrid at the Second Annual Rhododendron Show. Exhibited by Donald G. Graham, Seattle.

The fixing of a date for a Rhododendron Show is usually a matter of compromise. This year it was felt that the date selected would about coincide with the blooming of the mid-season varieties. Unfortunately, spring was from three to four weeks advanced and the mid-season varieties were most of them out of bloom. However, there were many hundreds of blooms of the later varieties which would not have been available earlier, and the azaleas were especially good.

Exhibits from several Portland members of the society were especially appreciated, as this



A new seedling (*Fabia x discolor*) exhibited by Mr. Endre Ostbo, Bellevue, Washington, awarded first prize as the best new rhododendron hybrid never shown at an American Rhododendron Society show prior to 1947. This was given an additional special prize and the Award of Merit as the best truss in the show. A hybrid of identical parentage produced in England in 1946 was named Margaret Dunn. It flowers in trusses of about 12, apricot yellow in throat, flushed pink at tip.



Betty Wormald, exhibited by Mr. George Grace, Portland, Ore., won first prize as the best pink hybrid, single truss, at the Second Annual Rhododendron Show.

necessitated bringing blooms and plants up by automobile.

I would be remiss if I did not acknowledge the untiring efforts of Mr. Brian O. Mulligan, director of the University of Washington Arboretum, without whose assistance the show could not have been staged. Also, due to the excellent cooperation of Mr. Charles May, head of the Building and Grounds Department of the University of Washington, lighting and water facilities were provided, as well as indispensable carpentry work in connection with the tables and the border displays. The coop-

eration of the University officials was appreciated very much indeed.

The following awards were made by the judges:

Class 1:

Mass plant exhibit of rhododendrons or azaleas or both, arranged for effect: First prize, Mr. and Mrs. Ralph DeClement, Bremerton Washington.

Class 2:

Mass plant exhibit of rhododendrons or azaleas or both, arranged for effect; other plant material included, provided rhododendrons or azaleas predominated: First prize, Lester E. Brandt, 711 7th Ave. S. W., Puyallup, Washington; second prize, Endre Ostbo, Bellevue, Washington; second prize, Malmo Nursery, 4700 25th Ave. N. E., Seattle; third prize, Foster Gardens, 7744 35th Ave. N. E., Seattle.

Class 8:

Rhododendron trusses or sprays, hybrid or species, not exceeding 15: First prize, Herbert G. Ihrig, Winslow, Washington (Mrs. G. W. Leak); second prize, Donald G. Graham, 1900 Shenandoah, Seattle (Fabia); third prize, Mrs. O. B. Thorgrimson, 7140 55th Ave. S., Seattle (decorum); honorable mention, Walter Stevenson, 6215 39th Ave. S., Seattle (Cynthia).

Class 9:

Fortunei series, one truss: Second prize, Mrs. Don H. Palmer, 6956 55th Ave. S., Seattle; third prize, Mrs. O. B. Thorgrimson.

Class 10:

Neriiflorum series, one truss: First and second prizes, Donald G. Graham (haematodes).

Class 12:

Campylocarpum series, one spray: Honorable mention, Mr. Herbert G. Ihrig (Campylocarpum hybrid).

Class 13:

Thomsonii series, one spray: First prize, Mr. Herbert G. Ihrig (Wardii).

Class 15:

Triflorum series, one spray: First prize, Mr. Herbert G. Ihrig (yunnanense).

Class 17:

Griffithianum hybrid, one truss: Honorable mention, Mr. Herbert G. Ihrig (Jean).



A. Occidentalis Delicatissima, given first prize as the best new azalea hybrid never shawn at an American Rhadodendron Show prior to 1947. Exhibited by Mrs. A. L. Dunn, Seattle. It is a hybrid of the Oregon azela, with pale, creamy yellow flowers slightly flushed pink.

Class 19:

Griersonianum hybrid, one truss: First prize, Mr. William Green, 8607 35th Ave. S. W., Seattle (Goblin); second prize, Endre Ostbo, Bellevue (Tally Ho); third prize, Endre Ostbo (Romany Chai); special prize, Mr. William Green (Goblin); special prize, Ernest A. Anderson, 3530 W. Laurelhurst Drive, Seattle (Day Dream).

Class 20:

Dichroanthum hybrid, one truss: First prize, Mr. George Grace, 10817 S. W. 35th Drive, Portland, Oregon (Fabia).

Class 21:

Cinnabarinum hybrid, one truss: First prize and special prize, Donald G. Graham (Lady Chamberlain); second prize, Mr. William Green (Lady Roseberry); second prize, Mr. Endre Ostbo (Lady Chamberlain).

Class 23:

Azaleadendron, one truss: First prize, Mr. Herbert G. Ihrig; second prize, Mrs. Louis C. Oulmonn, 10601 Marine View Drive, Seattle; third prize, Mr. George Grace (Broughtoni-aurem).

Class 24:

Best red hybrid, single truss: First prize, Mr. George Grace (Britannia); second prize, Mr. William Green (Mars); third prize, Mr. George Grace (J. H. Van Ness); special prize, Mr. George Grace (Black Beauty); special prize, Mr. George Grace (Reubens); honorable mention, Mr. George Grace (Princess Elizabeth).

Class 25:

Best Loderi, single truss: First prize, Mr. E. H. Garrett, The Highlands, Seattle (King George); second prize, Mr. E. H. Garrett (King George); third prize, Mr. Herbert G. Ihrig (King George).

Class 26:

Best white hybrid, excluding Loderi, single truss: First prize, Mr. Donald G. Graham (Snow Queen); second prize, Mr. Donald G. Graham (Snow Queen); third prize, Mr. E. H. Garrett (Beauty of Littleworth).

Class 28:

Best pink hybrid, single truss: First prize, Mr. George Grace (Betty Wormald); second prize, Orthopedic Hospital, Seattle (Mrs. E. C.

Stirling); third prize Mr. Donald G. Graham (Mrs. Furnival); honorable mention, Mr. Endre Ostbo (Betty Wormald); honorable mention, Mr. Donald G. Graham (Corona); honorable mention, Mr. William Green (Mrs. E. C. Stirling); honorable mention, Mrs. Paul Voinot, Medina, Washington (Mrs. E. C. Stirling).

Class 29:

Best salmon or orange hybrid, single truss: First prize, Mr. Donald G. Graham (Lady Chamberlain).

Class 30:

Best rhododendron spray (single), hybrid or species (excluding Triflorum series): First prize, Mr. Herbert G. Ihrig (Wardii); second prize, Mrs. Walter Phelps, Redmond, Washington (Furnival); third prize, Mrs. Walter Phelps (Golden Jubilee).

Class 34:

Best group of mixed hybrid rhododendron trusses, not exceeding six: First prize, Mr. Donald G. Graham (Mrs. E. C. Stirling, Lady Bligh, Queen of the May, Betty Wormald, Mother of Pearl, Snow Queen); second prize, Mrs. Don Palmer (Loders White, Beauty of Littleworth, Countess of Athlone, Mrs. Philip Martineau); third prize, Mrs. O. B. Thorgrimson (Gomer Waterer, Pink Pearl, Mother of Pearl, Betty Wormald, Mrs. E. C. Stirling, Pink Perfection).

Class 35:

Three sprays of deciduous azaleas: First prize, Mrs. Henry C. Isaacson, The Highlands, Seattle (Adrian Koster); second prize, Mrs. Harry Franzheim, 132 40th Ave. N., Seattle; third prize, Mrs. Arthur Krauss, 128 40th Ave. N., Seattle (Occidentalis).

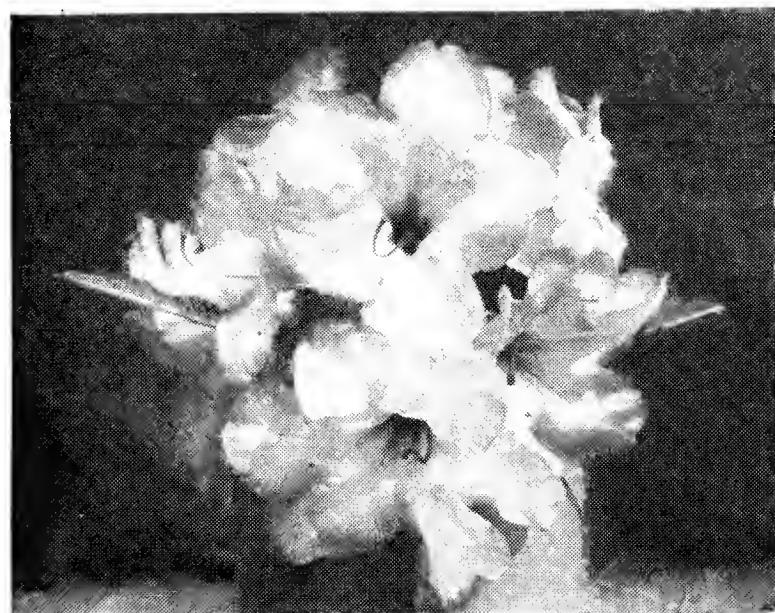
Class 36:

Best new American hybrid rhododendron never shown at an American Rhododendron Society show prior to 1947: First prize, special prize and award of merit as the best truss in the show, Mr. Endre Ostbo (new seedling, Fabia x discolor).

Class 37:

Best imported new hybrid rhododendron never shown at an American Rhododendron Society show prior to 1947: Mrs. William Pilz, Everett, Washington (Auriculatum Loderi).

(Continued on Page Thirty-five)



Goblin, voted first prize winner as the best R. Griersonianum hybrid at the Second Annual Rhododendron Show. Exhibited by Mr. William Green, Seattle. First raised at Exbury, England, Goblin (Break of Day x R. Griersonianum) is a brilliant, glowing red.

Notes on Culture of Azaleas and Rhododendrons in a St. Louis Suburb

C. BARBRE*

Azaleas

After ten years' experimentation, reading the literature and experiencing winter temperatures as low as 14 degrees F., summers as high as 104 degrees F., I feel repaid for my efforts by plenty of flowers and satisfactory growth of plants by increase in length and amount of stems. Large azalea plants of the deciduous types (*Kaempferi* and *mollis* hybrids) have been divided during November and replanted with equal success. No azaleas have died nor become cripples in my beds during the ten years.

Rhododendrons

These have been less satisfactory. I have had some hybrids die. During the past three summers, which have been somewhat cooler and had better distribution of rainfall, growth has been much better. I divided one large clump last fall. The ball fell apart and pieces planted were somewhat small. About 50 per cent continue to live.

It is perhaps better to start with mostly deciduous and a few evergreen azaleas (*Hinodegiri* and *Hinomayo*) and after one demonstrates satisfaction with them for two to three years, then widen range of azaleas and try species. Rhododendrons might be well tried by planting behind the evergreen azaleas. Then hybrid rhododendrons.

Recommended Culture

Location of Beds:

It will be harder to obtain results if plants are put into more or less isolated locations. Wind removes moisture faster.

Put beds in partial shade (under oak trees is best, though any deep-rooted tree shade will do) or in a lath house. The evergreens (A & R) require shade in winter, especially when ground is frozen. I prefer beds six feet

*Mr. C. Barbre, a new member of The Arboretum Foundation, lives in Webster Groves, Missouri, near St. Louis. He visited the Arboretum recently, while in the West attending the national convention of Men's Garden Clubs, in Portland.

wide. Plant in rows three to four feet apart and stagger plants in parallel rows which can be 18 to 24 inches apart. Use larger distance unless you plan to relocate plants in two to three years.

These plants must have soil that remains damp and friable throughout year, wet or dry, about 18 inches deep. Most of growth is near top of ground, but plants must be drained well.

I excavate 30 to 36 inches, throw out all dirt, cut bottom of bed to drain, slightly at least. Then I add six inches oak sawdust and three inches of dirt from hole and spade twice with fork, then three inches of each and spade as before until hole is full. Apply two pounds of ferrous sulfate or copperas per 20 square feet, soak bed with water, let stand about one month, test soil and if pH is not in range of 5.5 to 6.0, (get some alk-acid paper at university for test) add ferrous sulfate as before, soak again. Repeat until bed checks O.K. Plants may now be set. One-half inch of sawdust might be replaced with sand. Avoid lime rock.

Setting Plants:

Plants should be received balled and burlapped. Remove burlap and scrape off sides of ball with kitchen fork until fine roots can be seen (this insures removal of clay which some nurseries use to cover root ball and insure against loss of moisture during transit). Cut hole about four inches wider than ball and as near as possible same depth as ball height. Set in plant, firm soil around ball well. Water with fine spray daily for three days, then once or twice a week for next 30 days. Mulch bed as soon as possible with three-inch-deep layer of oak sawdust. Each fall add 10 to 15 inches oak leaves firm as possible between plants (and tuck some under branches). These should not be removed. If this appears unsightly in summer because plants are small, additional sawdust on top of leaves will "dress up" the bed until branches touch. After they

do touch it is convenient, when adding leaves in fall, to wrap a clothes line rope around to pull branches up so as to make it easier to put on the leaves. Then rope is removed. I usually add one pound ferrous sulfate per 20 square feet after leaves are added in fall. In spring, four pounds cottonseed meal or Vigoro per 20 square feet can be put on. After the second spring the oak leaf mulch will be adequate and no fertilizer is needed except to bring a "slow" or smallish plant up to par.

Watering:

During fall it is necessary to check by lifting up leaves in a few places to make sure the ground is damp. If not, water should be added. Ordinarily, rainfall is retained by the mulch enough so that watering is not needed. However, in hot, dry and windy periods, a fine spray is beneficial to keep plants cool.

Ordinarily, weeds do not grow in these beds. If some show up, pull out, but do not cultivate beds. There are only a few pests. I have had only red spider once in ten years. A fine spray of glue and water applied on a hot dry day will dry on leaves, then peel off and drop to ground, taking all soot, spiders and eggs—a dry cleaning for plants that later acts as a fertilizer.

Time to Plant:

Can be moved any time. I like fall best because I don't like to freeze or sweat much. Although I move them any time, it is better to have shipments in fall or spring to avoid shock to plants.

Varieties:

R. carolinianum very good, also *catawbiense* and *maximum*.

Deciduous azaleas, *mollis*, is a species and various plants will vary in shades of apricot to orange.

Kaempferi Hybrids—all colors.

I avoid the magenta, lilac, etc., and stress apricot, red, white, pink and yellow.

The deciduous usually are tall, from four to seven feet. Evergreen azaleas rarely over three feet. The rhododendrons will go four feet to ten feet.

Pruning not needed or desirable except to obtain shape desired. Very seldom needed.

Azaleas can be in full sun if necessary, although in our climate rhododendrons will sunburn in winter; also, the evergreen plants tend to bloom quickly after a warm spell in spring and if in too much sun, will have buds swell and then drop if late freeze comes. If in fair shade, they bloom as they should.

A large number of camellias have been moved to the banks at the upper end of Camellia Glade, making room for younger materials in the Arboretum's lath houses.

Plants of nearly 30 varieties of Glenn Dale hybrid azaleas have terminated several years' residence in the Arboretum lath houses and nursery, and are now located at the north end of Azalea Way.

Approximately 20 flowering peach trees—some double whites and some weeping varieties,—have been set out near the Madison Street entrance to the Arboretum, south of the lodge.

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Seattle's Third Annual Camellia Show

A THRONG of visitors poured through the stately doors of the Seattle Art Museum on Saturday and Sunday of the Easter week-end, to see the Third Annual Camellia Show sponsored by the Amateur Gardeners Club, staged through the courtesy of Dr. Richard E. Fuller and the Art Museum in this beautiful cultural center.

Culminating Seattle's first "City of Flowers Week" observance, the Camellia Show was oriental in theme, keyed by the Far Eastern land of the camellia's origin, as well as the museum's world renowned oriental collection, presented by Dr. Fuller and his mother, Mrs. Eugene Fuller.

Choice porcelains, metals, jade and paintings from the oriental collection, each with a floral motif, were exhibited together with displays in the oriental manner by leading Pacific Northwest flower-arrangers in the Octagonal Room just off the Garden Court. These arrangements were by invitation and were non-competitive.

In the Museum's Garden Court were staged the Landscaping Display, under the direction of Roland Koepf, maintenance superintendent of the Seattle Park Board; displays illustrating the use of camellias in creative decorating, under the direction of Clarence Prentice; the horticultural and non-competitive commercial displays. Azaleas, rhododendrons, flowering cherries, orchids, primulas and many other spring flowers added their fresh or exotic beauty and fragrance to the showings.

Two tables centering the Garden Court, well covered by specimen camellia blooms in an imposing range of hues, in singles, semi-doubles and doubles, and entered by both amateurs and commercial growers, certainly demonstrated not only the number of varieties of camellias grown here but, since all of these blooms were picked from bushes growing outside in this locality, the value of this shrub for Northwest gardens. John McCoy won three firsts on singles as well as first in the group of three camellia blooms.

Downstairs, in the Study Hall, the Decorative Exhibit included a number of competitive arrangements featuring camellias. These were entered by individuals and garden clubs. Firsts were won by the Lake Washington Garden Club, Unit No. 1; the Mt. Baker Garden Club No. 1; the Haller Lake, Better Gardens, and Hillcrest Garden Clubs, and the Seattle Civic Garden Center.

First for an Easter table arrangement featuring camellias was won by Mrs. B. J. Wheelon. Mrs. Harry Stinson and Mrs. E. M. Foisie each won a first on her coffee table arrangement. Mrs. L. Karrer and Mrs. Grace Payette each won a first for a luncheon table arrangement.

Camellia corsages for morning, afternoon and evening wear were shown in the Study Hall. Two gorgeous fans, each spanning 6 feet 8 inches, and patterned after two Ming fans in the museum's oriental collection, were made by Mrs. Glen Tritle and Mrs. Harry E. Wilson, members of the sponsoring Amateur Gardeners Club, to flank the entrance of the Study Hall and effectively display the corsages. Firsts in the corsage division were won by Mrs. E. M. Foisie, Mrs. Hugh L. Lewis, Mrs. E. R. Beaby.

Special awards were won by Endre Ostbo, Clarence Prentice, the Rainier Beach Perennial Gardens, Bonnell's Nusery, Nichols & Day Primrose Gardens, Rhodellia Nursery of Oregon City, Oregon; Mrs. Robert A. Cartner and Thomas A. Buzard.

A Sunday feature of the Camellia Show was the movie and lecture, "Flowers and Gardens of England," by Dr. John H. Hanley, editor of "Northwest Gardens and Homes."

The general chairman of the Camellia Show was Mrs. Roy F. Taylor. Judges included:

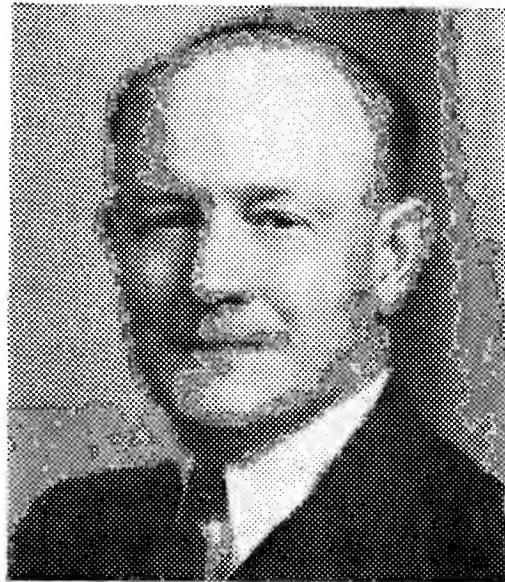
Horticulture: John Henny, Jr., of Brooks, Oregon; Frank Steybork of Gresham, Oregon; Ralph De Clements of Bremerton, and Cecil Solly.

Decorations: Dr. Richard E. Fuller; O. E. Holmdahl and Prof. O. B. Howell of Pullman.

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Book Review

The American Lily Yearbook for 1946, The American Horticultural Society, publishers.

THE American Lily Yearbook of the American Horticultural Society for 1946, is an incentive to lily culture.

From it many interesting facts—all well treated in this volume—are gleaned:

"... Consider the lilies ... they toil not"—Let the growers do that. So effectively have they done that in getting virus-resisting stock, a new medium for seed germination, and scale spray, that a whole new market has been opened up.

... Japan's 90 per cent of bulb importation stopped with World War II. The miracle of the Croft lily, with its superior flowers and its complete freedom from virus disease, made the commercial growers in Oregon increase from 40 to 1000, and the price of acreage near Bandon rocketed to \$1000 per acre.

... Jan de Graaf, from the Oregon Bulb Farm, predicts that in 10 years hybrid lilies will surpass anything we have yet seen.

... Lily diseases in Western Washington are covered in this volume by Charles J. Gould, of the Washington State College. Basal rot, botrytis, mosaic, and fasciation, a plant malformation, are the chief enemies. The Bordeaux-Penetrol combination is widely used in the Pacific Northwest, not only on lilies but on iris and daffodils.

... The nomenclature of lilies, which up to 1935 was in confusion, is being worked on in this country. This may well finger-print lilies for all time.

... The Croft saga, and the story of Carl Purdy as collector of native wild plants, make fascinating reading.

... The dogs of war all but trampled out the lilies of France. Now individuals are trying to coax back from the torn earth this choicest of all blossoms, which to them is something more than a flower—a national emblem.

... A horticulturist turned soldier found himself near the native habitat of the Ma-

donna lily. Enlisting a kindred spirit at the American University of Beirut, they climbed to find on a rocky ledge 99 perfect specimens of *L. candidum*. The ground bulbs have long been used for infection, which, according to a doctor, may contain some moulds between the scales.

... To prove that all's right with the world, Chelsea promises a 1947 flower show where every cottage gardener may boast that *L. candidum*'s neglect during the war had not hurt it.

... The lily industry is still in its infancy. Not until the big exhibits in New York, Boston and Philadelphia did the lily really come into its own. A great fillip was added by the introduction of *L. regale*.

This book encourages home gardening. The future of our democracy may well rest on what the common man does with his extra days, if he works only five.

—Laura B. Jarvis

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ARBORETUM NOTEBOOK

This department is published for correspondence and pertinent comments by experienced growers on interesting plants and their culture. We solicit your questions but space limitation necessitates the publishing of only such answers as we deem of general interest.

MANY home owners, intrigued by the beauty and seeming suitability of small evergreen trees, have used them as foundation and border plantings and have later been rudely awakened to find themselves possessed of forest trees of such proportions as to menace all other plantings by the absorption of moisture and the shutting out of light and air. Such trees, however beautiful, should be discarded, for eventually the encroaching roots and falling branches may prove more costly than removal costs. These large forest trees are out of all proportion to their surroundings.

There are, however, many groups of shrubs and small trees, both deciduous and evergreen, which lend themselves admirably for use in the small garden, giving flowers in spring and summer, often gorgeous autumn coloring in the fall and sometimes graceful silhouettes in the winter. Chief among these desirable plants are certain members of the *Cornus*, or dogwood family. Our own lovely native *Cornus Nuttallii* does not adapt itself very readily to civilization. If it does survive conditions in the town garden, it eventually becomes too large.

Among those dogwoods that are suitable is *Cornus Mascula*, or, as it is commonly called, *Cornus Mas*, the Cornelian cherry, which produces a mass of small yellow flowers in February, followed in the fall with shining scarlet fruits as handsome as cherries. The shrub has a dense growth of glossy foliage.

The next in point of blooming time is *Cornus florida*, the eastern dogwood. The flowers are showy and the tree assumes beautiful forms. The white flower bracts are smaller than those of *Cornus Nuttallii* but are none the less as beautiful and often interestingly shaped. *Cornus florida rubra* has bracts ranging in different trees from a lovely rose to deep crimson. The bark and flower buds in early spring, when life begins to stir, makes a beautiful pinkish-grey tone. *Cornus florida rubra* may easily be classed as one of the most beautiful of all flowering trees.

There is a double form of *Cornus florida* and also a weeping form, both desirable.

Cornus kousa comes from the Orient and blooms later than *Cornus florida* and has a more upright growth. It is a very beautiful dogwood and produces scarlet fruits and highly colored leaves in autumn, and should if possible be grown along with *Cornus florida*. The autumn coloring of all dogwoods is brilliant if they dry out sufficiently in late summer and early fall.

Cornus canadensis, the little creeping dogwood, found in our woods, is perhaps the most charming and beloved of all the dogwoods, and if given proper conditions, leafmold, moisture, shade and drainage, can be easily grown in a small garden.

M. T.

1 1 1

On first and casual observance *Pernettya rupicola* may appear very like *Pernettya mucronata*; but it lends itself to a greater variety of plantings. Being semi-prostrate it is a very suitable plant for the rock garden as well as foreground plantings and makes a beautiful but robust ground cover. The leaves are bright and shiny, spiny; and the young shoots are vivid crimson, glowing with life. It endures full sunlight. The fruit is variously described as cream color or red. I have seen only the red forms.

OLD GARDENER

1 1 1

Our heath and heather plantings can be lightened and given more skyline interest by the introduction of some of the dwarfer ledums and rhododendrons. This also adds attractive variation to the foliage of a group. Except for the very large and sweeping areas *Ledum groenlandicum* is too tall; but *L. columbianum* is medium-sized; *L. paustre* is a low, gypsy-wild thing and *L. nipponicum* is but a few inches in height. They all have attractive evergreen foliage and heads of white flowers in May. The stamens are exserted, which produces a starry appearance. The plants—all parts—are pleasantly aromatic. Very often it is desirable to introduce a little yellow into the heath garden. This can be done by the use of *Rhododendron brachyanthum* and *R. hypolepidotum*. They both belong to the *Glaucum* series and are both behung with greenish-yellow bells that are waxy in texture. They are really lovely. Earlier in the year *R. racemosum* will give a good show in almost white to rosy pink. Later the low shiny-leaved *R. radicans*, *R. keleticum* and *R. cosmetum*, covering themselves with a rose-crimson bloom, make a wonderful foreground to the heath or bog garden as well as a beautiful carpet for the floor of such areas.

E. M. F.

1 1 1

Isaac House hybrids of *Scabiosa caucasica* are the best strain I know. It includes some outstanding named varieties in both blue and white colors—the blue being by far the better known. A beautiful combination to my way of thinking is blue scabiosa arranged with *Hunnemania*—really a charming sight. The one great fault of scabiosa is that the blue is not good under artificial light. Propagation is easy from seeds sown in flats to be wintered in a cold frame, but if you have gone in for choice named varieties or if you have an especially fine specimen of your own raising which you wish to multiply try dividing the plants in February, placing the

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pieces in the open ground in their permanent quarters just as if it were a more conventional time of the year. This practice has resulted in excellent success for me against nearly 100 per cent failures on attempts made later in the season. Always bait freely for slugs—scabiosa is a banquet dish to them.

"X."

1 1 1

Phlox adsurgens has the reputation of being extremely difficult to grow. I have found it extremely easy. I grow it in deeply prepared soil containing a high percentage of alder leaf mold, some old manure and, to give a touch of acidity, a generous measure of chopped fern roots. The result is large mats of robust plants. I have never attempted to gather seeds, but cuttings taken in September root readily and young plants put out in the spring in the soil combination above described will produce blooms the following year. Full sun causes the lovely pink blooms to fade prematurely but given this soil combination and light shade the plant gains a top classification from all who see it.

"X."

1 1 1

Hunnemania, the Santa Barbara poppy, deserves greater popularity. An English writer referred to it as the most satisfactory annual in the world. It does very well here, frequently surviving our winters and being on hand to start blooming as prolifically as ever the following spring. Self-sown seed germinates freely; also seed sown in the spring will give a good account of itself within a very few months. The variety "Sunlight", which was introduced, I believe by Bodger of California, is identified by a few extra petals, and I think adds charm to an already beautiful subject. It is a grand, clear yellow, lasts very well in water and blooms freely over a long period. Faults: Try it and see if you can find any—I never have.

"X."

1 1 1

". . . I believe that I am now able to grow well many of the broadleaf evergreens which have been heretofore considered as hopeless because of the usual long, hot, dry spell in the St. Louis area. With thanks to Missouri Botanical Gardens, I find by having beds three feet deep and composed of about 50 per cent oak sawdust and 50 per cent soil containing sand plus a three-inch sawdust mulch, that the beds require relatively little water and the azaleas and rhododendrons make excellent growth . . . I might add that we have had three cool summers, which may have been a help . . ."

C. B.

1 1 1

In New Zealand, Tasmania and Australia *Leucopogon Fraseri* grows at elevations of 4,500 feet and takes the place of the heathers growing at like elevations in our own mountains. It will form a wide carpet of erect branches of some five to eight inches, closely covered by small bristle-tipped leaves. It blooms in May and permeates the air with a delightful heliotrope-like fragrance. The flower is a slender tube, rather grayish pink and filled within by lavender hairs. The fruits are small drops of bright orange-amber. It is a pretty thing and a rare little plant.

E. M. F.

" . . . some of the things I (and others) have recommended for doing in the National Arboretum, I am doing now in the Arnold Arboretum. I feel that sooner or later all arboreta are going to use chiefly ornamental material of the best types in their conspicuous areas. Other plants, merely of scientific interest, are relegated to less frequented areas or even distant 'farms' where they can be cultivated mechanically at minimum expense. In this way only the 'best' plants are on display, but at the same time the others are available for close study."

DONALD WYMAN

1 1 1

Things I have liked this spring: The pale, greenish yellow of forsythia at the base of the pale, spring-like foliage of larix. A wing of vivid pink of *Cornus florida rubra* appearing from behind the abundant white bloom on *Viburnum tomentosum*. The sharp blue flowers of *Lithospermum diffusum* var. *Grace Ward* climbing through the shiny-leaved branches of *Cotoneaster rotundifolia*. *Narcissus minimum* and *N. junctifolius* coming up cleanly through the limestone grit of scree.

E. M. F.

1 1 1

Sycoptis sinensis and *Distylium racemosum* are two little used and very desirable shrubs for winter green and bloom in our Northwest gardens. Both grow into very tall, large shrubs—up to 12 feet in my and my neighbor's garden. *Sycoptis* is of a loose habit and very graceful with soft, rusty-looking stems and narrow green leaves with grey hairy backs. It blooms in February and March, little feathery yellow blooms hanging in groups all over the tree. The blooms are inconspicuous but attractive. *Distylium* on the contrary has a very neat, regular habit. The leaves are dark, shiny green and rather oval. In early winter, the blooms—tiny, soft red tufts—grow all along the stems under the leaves. Both are easily propagated from cuttings, and have proved very hardy. Both are allied to the *Hamamelis* or witch-hazels.

S. M. K.

1 1 1

The unusually disease-free lilac does have some enemies in this area of the country which are primarily the leaf miners.

This characteristic difficulty is evident by the curling of the leaf, usually in July and August, which starts with the tip of the leaf and is rolled back under the leaf, with the entire section of the leaf turning a rust or copper color.

Primula Juliae Hybrids
Choice Rock Plants
Dwarf Shrubs
Iris

CATALOG ON REQUEST

Carl Starker Gardens

Jennings Lodge, Oregon

If you were to unroll this section of leaf a small grub would be found to be living in this protected covering. Later in the season this larva or grub seems to drop to the ground and remains there until spring, when it emerges as a fly to once again complete the cycle of laying its egg on the tender new lilac leaves.

There is no visible appearance to indicate that the fly has deposited the egg in the spring of the year, and it is not evident until July or August when it is usually too late to do anything.

The proper control would be two things: first, see that the ground is fairly well cultivated around the base of the lilac, cultivating into the early fall. This will help to bring the small grubs to the surface of the soil where they will be visible to birds who will destroy many of them. Second, we have found it a good practice to spray our bushes in the early spring, as the leaves begin to appear, at intervals of one to two weeks, depending upon weather conditions, using a contact spray of Black Leaf 40, pyrethrum, arsenic of lead, and a spreader of some kind. Generally we use a spreader put out by Dupont, obtainable at all garden and seed stores. The quantity of contact spray and lead arsenic is used according to directions on the bottle or package. If the spraying is not done then it can be done after the blooming season or as soon as the blossoms have passed their height. At this time spray with arsenate of lead, using a spreader to help it stick onto the leaves. This would have a tendency to kill the small leaf miner grub as it consumes part of the tip of the leaf or sections of the leaf during the period of curling the leaf for protection. ROY S. LEIGHTON

Arboretum Activities (Continued from Page Three)

sheltered place. They include *Daphne* species, *Hebe (Veronica) Hulkeana*, *Pittosporum Tobira*, *Salvia haematodes* from Greece, several Californian *Ceanothus*, the South African *Gerbera* or Barberton Daisy, the dwarf pomegranate, the handsome golden *Fremontia californica*, and *Lyonothamnus floribundus*, the ironwood of Santa Cruz island, Southern California. On the west side of the office a bed of the pretty little scarlet *Lilium tenuifolium* is in flower at the time of writing, so that we hope in future to have something interesting for visitors here at various seasons of the year.

Planting operations have now (May 23rd) almost ceased for this spring with increasingly dry and sunny weather, but by the fall we expect to have fresh sites prepared and ready for planting, especially in the area facing Union Bay, so that an early start can be made again in October.

Headquarters for True-to-Name Roses . . . Shrubs

BROADLEAF and CONIFEROUS

EVERGREENS . . . FRUIT TREES



Shrubs

(Continued from Page Eight)

improvement over *Viburnum Carlesii*, but any improvements are insignificant; *Viburnum Carlesii* is still the favorite because of its large, full heads of blooms and the general habit of being shapely and formal. On the other hand, there may be those gardeners who favor the exceedingly graceful slender branching of *Viburnum Burkwoodii*. Moreover, the florets have colorful golden centers which give them distinction, and, best of all, this shrub is semi-evergreen if given protection from wind and direct sun during the winter months.

Penstemon fruticosus

One of the most effective dwarf shrubs for Eastern Washington and one which is of utmost value in the rock garden or wild garden is *Penstemon fruticosus*. It is the earliest of the Penstemons and when left undisturbed by cultivation and allowed to ripen without constant summer sprinkling, will provide one of the most spectacular floral displays of the spring. It grows to a maximum of twelve inches, forming a dense mat of spreading branches covered with narrow foliage which is evergreen. Penstemons do not like the encroachment of other plants, but if given adequate drainage, they will thrive equally well on gravel slopes or in the crevices in rock ledges. A more dwarf relative, *Penstemon Menziesii*, blooms a little later. It is very purple and when used with *Penstemon fruticosus*, makes an attractive showing.

Daphne Cneorum

To many people living in coastal cities, it may seem unnecessary to call attention to an

old favorite such as Rose Daphne. It is, of course, one of the choicest of the dwarf shrubs, but what is particularly significant is that it is unusually satisfactory in Spokane gardens. This writer has seen *Daphne Cneorum* in gardens of New England and the Central States where it appeared almost impossible to bring it through the average winter seasons. Spokane gardens have many fine specimens which have survived many a hard winter with only slight care. Again the presence of good drainage, plenty of sun, a little protection in winter to prevent burning, and only a moderate amount of moisture during the summer, are the keys to success with this welcome addition.

Rhododendron mucronulatum

With all the enthusiasm which has grown up recently concerning the use of rhododendrons and azaleas in Spokane, mention should be made of *Rhododendron mucronulatum*. This attractive deciduous rhododendron has succeeded for many years in the beautiful garden of Mrs. Ray Roberts. The past winter season in spite of its low temperatures and strong drying winds, has not in any way had harmful effects on this excellent shrub. It has bloomed very heavily and created a striking accent in its exposed location in the rockery. Those who have had some good results with rhododendrons and azaleas in this region should not overlook the value of this early one in connection with plantings of the late blooming types. The rosy purple blooms are easily combined with the colors of spring bulbs and early perennials. The foliage is light green and, with sufficient moisture in the early fall, will turn to brilliant warm colors.

ORCHIDS

Many Central American Orchids are easy to grow in the North. A descriptive catalogue together with cultural directions will be mailed on request by one of the largest growers of "easy to grow" Orchids in the West.

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Arboreta

(Continued from Page Six)

public-spirited men and women in all fields of American life. To implement the program, the association is appointing the American Forestry Council to serve as an advisory committee to its board of directors in enlisting the cooperation of interested individuals, groups, organizations and agencies in translating this program into concerted national action.

Results of previous forest congresses and programs have been very successful in calling attention to the nation's need for timber supply and in accomplishing action. The results of the present program for American forestry will be limited only by the interest and effort of all Americans in making something of them.

* * *

Lily Breeding

(Continued from Page Eleven)

ever, it is considered separately as the "experimental phase" of lily breeding, since it involves large scale pollinations and crosses between all available types and species. From these crosses have come many remarkable seedlings and new types which are a story in themselves. Suffice it to say that widely separated types of lilies have been successfully crossed and the results to date give promise of future strains in endless variety of new, colorful, easy-to-grow lilies.

* * *

Kingdon Ward Expedition

Under the auspices of the American Rhododendron Society, Captain Kingdon Ward,

famous plant explorer, is now making arrangements for a plant hunting expedition into the high mountain regions of Upper Burma.

Authoritative sources are of the opinion that the area selected should yield seeds of new rhododendron species and other plant material not yet known to cultivation. Seeds of camellia, magnolia, rosa, primula, meconopsis, gentiana, incarvillea, iris, anemone, lily, delphinium and other perennial plants are to be collected.

The American Rhododendron Society has been offered the assistance of the Royal Botanic Gardens at Kew and Edinburgh, where outstanding botanical authorities will provide the correct scientific determinations for the collected plant material. The distribution of seeds and herbarium specimens collected on this expedition will be undertaken by a scientific institution in the U. S. A.

Shareholders in the expedition fund will receive their proportionate share of the seeds or plant material collected.

The American Rhododendron Society is offering shares to individuals at a minimum cost of \$25 per share. Garden Clubs and other plant societies wishing to participate in the venture may purchase group shares at a minimum cost of \$50 per share. There is no limit to the number of shares which any individual or Garden Club may purchase.

Applications for shares should be sent to Mr. John G. Bacher, chairman, Expedition Committee, the American Rhododendron Society, Box 8828, Portland 7, Oregon.

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Rhododendron Show

(Continued from Page Twenty-four)

Class 38:

Best imported new hybrid azalea never shown at an American Rhododendron Society show prior to 1947: First prize, Mrs. A. L. Dunn, 3305 Rose Terrace, Seattle (Occidentalis Delicatissima); third prize, Mr. Donald G. Graham (Daviesii).

Class 39:

Arrangements in containers using rhododendrons and azaleas, use of other materials optional: First prize, Lake Washington Garden Club, Unit 1, Mrs. Henry C. Isaacson; second prize, Seattle Garden Club; third prize, Mrs. Alexander Gow, 2523 33rd Ave. S., Seattle; honorable mention, Seattle Garden Club.

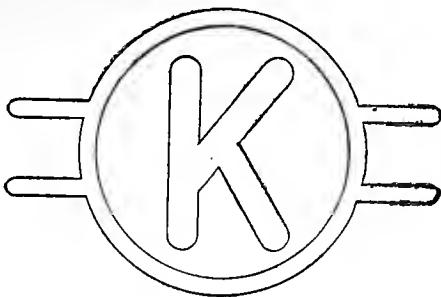
Class 40:

Best evergreen azalea: First prize, Mrs. Louis C. Oulmann (Ledifolia Alba); second prize, Mr. Donald G. Graham (Floradora); third prize, Mrs. Arthur Krauss (Ledifolia Alba).

Class 41:

Best blue or purple rhododendron hybrid, single truss: First prize, Mr. George Grace (Purple Solendour); second prize, Mrs. Walter Phelps (Blue Peter).

—All photographs of the Rhododendron Show are by Robert Ratliff, Seattle.



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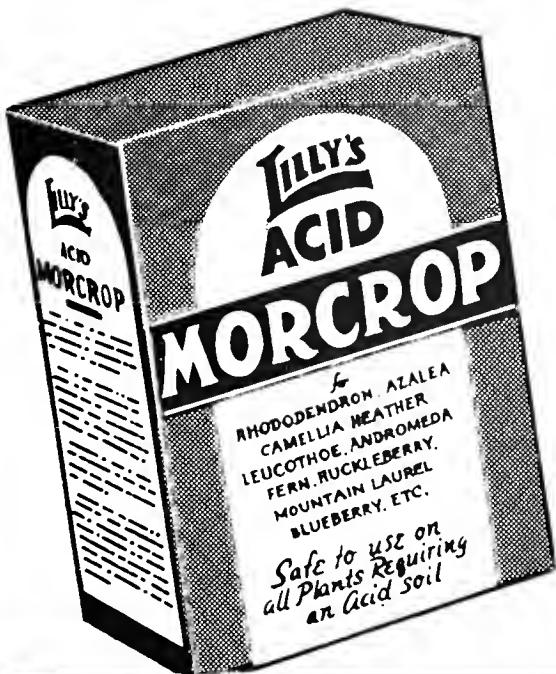
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